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ABSTRACT

During its 1972 annual meeting in Washington, D.C., the American Association for the Advancement of Science sponsored a community information exposition, titled Capital City Readout, on the role of science and technology in local social problems. The exposition sought to explore various ways to exchange information about problems and policy issues among citizens, the government, and the community. A variety of interactive communication techniques such as graphic displays, games, and electronic devices were utilized. Persons attending the exposition were asked to fill out a ballot book on 22 local issues. This report presents a rationale for community information expositions, gives useful data on the exposition itself--such as costs and funding, exhibits and sponsors, and promotional activities--and provides an evaluation of the exposition. In addition, recommendations and suggestions for future expositions are discussed and some opportunities for future expositions suggested. (JG)

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COMMUNITY INFORMATION EXPOSITIONS

ISSUE-ORIENTED DISPLAYS AND POPULAR UNDERSTANDING OF SOCIAL PROBLEMS

Photo by CHARLES DEL VECCHIO of THE WASHINGTON POST

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THOMAS V. VONIER and RICHARD A. SCRIBNER

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

ED 0920

COMMUNITY INFORMATION EXPOSITIONS

ISSUE-ORIENTED DISPLAYS AND POPULAR UNDERSTANDING OF SOCIAL PROBLEMS

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PREPARED UNDER A GRANT FROM
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SUMMARY AND PREFACE

This document describes an attempt to communicate with citizens about community problems and opportunities through an exposition of problem- and policy-oriented exhibits; the lessons learned from that experience; and the need for more and better variations of such expositions.

During its 1972 annual meeting in Washington, D.C., the American Association for the Advancement of Science (AAAS) offered a popular community information exposition, Capital City Readout, on the role of science and technology in addressing local social problems. Using a variety of communication techniques, including graphic displays, games and interactive electronic exhibits, over 40 governmental and private organizations portrayed problems of the region and efforts being made to solve them. The event also afforded opportunities for direct personal contact among visitors -- community members and AAAS registrants -- and staff members of participating organizations. The Association's aim was to provide an educational service to the host metropolitan area and to explore ways to exchange information about problems and policy issues among citizens, the government, and the technical community. By conducting this experiment in the context of its annual meeting, the AAAS made it possible for a cross section of its members and meeting registrants, from all parts of the country and all sectors of the technical community, to observe these efforts to communicate with citizens on the social and technical dimensions of contemporary problems and to encourage informed dialogue about those problems.

About 5,500 citizens participated in the five-day exposition; approximately half of these were also registrants at the AAAS annual meeting. Attendees were asked to respond to informal statements (in the form of a ballot book) on 22 issues facing the Washington region, primarily to facilitate interaction between visitors and exhibitors. Nearly half of the attendees completed the ballots.

Generally speaking, citizen understanding of issues is a prerequisite to useful citizen participation in planning and decision making. Efforts made by government and private organizations to communicate with general audiences rarely consider a complete range of alternatives or the social and economic costs and benefits associated with particular options, nor do they usually permit immediate audience response.

Interactive issue-oriented displays on social problems provide one way to involve responsible organizations and the public in meaningful dialogue on the social and technical dimensions of possible alternative solutions.

To date, there have been very few such communication/participation activities. A need exists to explore and experiment with opportunities now available to: communicate and display social problems and policy options to the public; develop citizen participation in this process; analyze such experiments when they do occur in order to apply lessons learned to the design of future experiments; and begin to establish a cumulative body of knowledge upon which future progress in communication and citizen participation may build.

Community Information Expositions, improved replications of Capital City Readout, would attempt to portray through various exhibit and interactive techniques, the range and interrelatedness of community problems, possible solutions, and the role of science and technology in these problems and solutions. We try to show, in the introduction to this document, that such expositions can help to better inform citizens about problems and options facing their communities.

We have tried to develop a readable and information-packed account of the need for and role of Community Information Expositions and like activities, based on our own experience with the first large-scale attempt to create such an exposition, Capital City Readout, and the information and contacts we have accumulated. We have also tried to develop an additional dimension to the report through extensive use of graphic material.

This report has two major parts. The first provides a record and evaluation of AAAS experience with issue-oriented displays as well as popular understanding of science and technology addressed to social problems. It affords a basis for examining the usefulness of community expositions and, as a technical account, may be useful to groups interested in staging similar events. The record includes: pertinent planning aspects; processes and criteria used for exhibit selection; elements of exhibit design; a profile of each of the 40 exhibits, including photographs; details of costs and promotion, and also a summary of difficulties encountered. The evaluation includes: summarized responses from exhibitors and attendees; simple analysis of attendance figures and responses to issue ballots; a comparison of exhibits; and as critical a look as possible at the overall accomplishments of Capital City Readout by those actually involved in the endeavor.

From this experience, we learned a great deal which could improve future efforts. We also discovered other similar efforts and a number of related projects. The second part of the report considers lessons we learned and is a collection of much of the valuable, related information we have accumulated.

Consideration of various factors influencing the effectiveness of future expositions leads to recommendations and guidelines useful to groups and institutions concerned with citizen participation, including the need to: provide for effective planning and coordination; organize or synthesize problems and policy alternatives while maintaining a balanced approach to available options; attract and sustain the attention of community members with diverse needs and attitudes; and build a dynamic viability into and secure long-term support for such activities.

We hope this document will provide a useful record of a communications experiment and a valuable guide for those individuals and organizations considering similar endeavors.

T. V. Vonier

R. A. Scribner

FOREWORD

Aside from a few individuals who voiced concern about public misunderstanding of science and technology, virtually the whole postwar generation of scientists and engineers has been content to be presented to the general public as miracle workers. And if the means specific to accomplishments in medicine or space flight were little understood, perhaps it may have been just as well for what that contributed to the sense of magical accomplishment. The great leading ideas of modern science remain remote -- intellectual galaxies whose character, indeed existence, is known to few. Technical decisions have been made by the best available specialists, with the effect that they tended to be privately, even secretly, made. The resulting risk of public disillusionment and hostility, if not consciously run, should nevertheless have been unmistakable.

The agencies responsible for communicating knowledge to the public tend to deal with the intrinsic substance of science and technology, rather than their relation to citizen interests, and rarely afford opportunities for people to relay responses that might influence technical applications. Earlier experience in popular education programs with the National Park Service and the Smithsonian Institution led me to question whether most citizens seek information about science and technology while they are visiting parks or museums, and whether they would be disposed to do so on any basis other than discovering contexts evincing clear relationships between citizen interests and technical subject matter.

As a planner-editor for the 1972 AAAS annual meeting, a question of particular concern to me was how the meeting might better serve as a source for popular communications. Daily radio and television broadcasts featuring meeting content, a science film theater, and semipopular illustrated presentations were already regular features, but they dealt with the content rather than the social applications of science. I proposed that the Association seek to portray for the general public of the Washington region the way science and technology seemed likely to influence the future in matters of direct interest to them: regional sources of energy, the shape of the transportation system, health services, urban planning, and the like. This would take the form of an exposition in which large and small local organizations would portray in a reasonably balanced way their use of science and technology in addressing the problems of the Washington region. The context of the AAAS meeting, with participants from all over the country, guaranteed that we would reach a cross section of the scientific community and perhaps encourage wider testing of similar projects elsewhere. It would also afford opportunities for citizens and representative local organizations to participate directly in its meeting, rather than provide just scheduled formal sessions on local matters as done in past meetings.

Our major thesis argued that citizens would become involved in communicating with exhibitors if science and technology were portrayed in terms of pre-existing citizen interests. The fact that over one-third of local participants deposited issue ballots on a wide range of issues dealt with in the exposition contrasts very favorably, for example, with the proportion of museum visitors who use listening headsets or buy catalogues of exhibitions. It is more than ten times the average degree of response to direct mail solicitations. We would not seek to maintain that each of these visitors actually discussed each of the exhibits with the representatives of participating groups. We did not expect that. Neither did we seek to ascertain how much a sample of the visitors actually learned by way of information imparted during their stay. I think it fair to say that the atmosphere in the exposition space was highly charged with interest and that the use of the issue ballots confirms our supposition that communication with the general public is facilitated when situated in the context of pre-existing interests and concerns.

Thomas Vonier, who acted as associate coordinator for the project, and Richard Scribner, who directed the 1972 AAAS annual meeting and participated in the planning of the exposition, have collaborated closely to develop this description of the project -- its successes and its shortcomings -- in terms that may enable other communities to consider convening similar events or incorporating features of Capital City Readout in more permanent installations such as community information exchanges.

In the report which follows, they describe the event and offer a sensitive commentary on some of the lessons we learned. It may be read as a description of a communications experiment, as an account of the changing social context of science and technology, or as an invitation to others to consider similar undertakings. Capital City Readout presented us with difficulties of many kinds, from specifying an innovation for the AAAS annual meeting, for the scientific community, for the Nation's Capital, and certainly for those of us who worked on it. One's intention in sponsoring an innovation is that others will be encouraged to comment upon it, criticize, or, best of all, supplant it with a better undertaking of their own.

While the authors have modestly kept their primary focus on the event itself and its direct implications, there could hardly be a more important subject in 1973 and the years surrounding the bicentennial than ways of affording citizens a wider opportunity to participate in decisions affecting them, which must certainly include a heightened appreciation of science and technology as factors in the contemporary world and wider access to ways in which society's decisions may best be employed in the future.

Philip C. Ritterbush
Chairman
ORGANIZATION::RESPONSE

ACKNOWLEDGEMENTS

The fact that the popular exposition Capital City Readout occurred at all is in very large measure due to the foresight and persuasiveness of Philip Ritterbush, Chairman of ORGANIZATION::RESPONSE, and to the enthusiasm of Joseph Valerio, Instructor, School of Architecture, University of Wisconsin. For the period during which the exposition was planned and carried out, Dr. Ritterbush was associate editor of the AAAS annual meeting and director of the exposition effort, and Mr. Valerio was the chief exposition coordinator. We are all indebted to William Bevan, executive officer of the AAAS, whose generous support and backing for the project were essential, and to James Butler, director of the AAAS Office of Communications, who provided much guidance and advice.

This report owes its existence in large measure to the unstinting interest, encouragement and guidance provided by Robert Lamson of the Office of Exploratory Research and Problem Assessment of the National Science Foundation and, of course, to the financial support provided by that institution.

We are indebted to Chandler H. Stevens of Rensselaer Polytechnic Institute's Division of Architectural Research, who was ever ready to give information and assistance and who helped us to see the potential of community expositions and place them in a broader context of citizen involvement.

We gratefully acknowledge the assistance, advice, information and, in many cases, hospitality generously and graciously provided by the following people: Wayne Howell, director of citizen involvement programs, and Geoffrey Ball, consultant, Charles F. Kettering Foundation; Eugene Eschbach, staff scientist, and Everett Irish, staff fellow, Battelle Pacific Northwest Laboratories; Paul Perrot, assistant secretary for museum programs, Smithsonian Institution; Victor Danilov, vice president and director of the Chicago Museum of Science and Industry; James Backstrom, director of the Pacific Science Center; John W. Abbott, executive secretary of California Tomorrow; Duncan Cameron, director of the Brooklyn Museum; and John Hench, vice president and chief "imagineer" for Disneyland and Disney World. We also wish to acknowledge with gratitude the advice and contributions of: Russell Rhyne of Patterns and Systems, International, San Carlos, California; David Bird of Bison Associates in Boston; John Peetz, director of the Oakland Museum; Hewitt Crane of Stanford Research Institute; Richard Bolt of Bolt, Beranek and Newman; and many others. Of course, Phil Ritterbush, Jim Butler and Joe Valerio have all made numerous useful contributions to this document.

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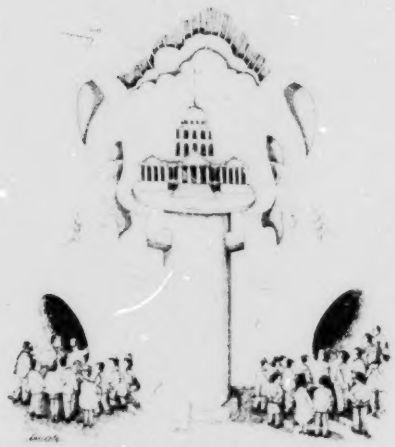
T.V.V. and R.A.S.

COMMUNITY INFORMATION EXPOSITIONS

INTRODUCTION

1.0
BACKGROUND



Dill Cole TECHNOLOGY REVIEW

Because the nature, perception and solution of community problems have become more complex and difficult, many citizens believe that their influence has diminished to the point where "citizen participation in decision-making processes" means little more than reaction to decisions already made. Evidence for this view ranges from massive public demonstrations against Federal government foreign policy to the growth of citizen-initiated, privately financed consumer protection, and environmental action groups. Many of these groups view themselves as watchdogs over experts and government officials who are supposed to advise and govern in the public interest.

In addition to current dissatisfaction with ways of resolving political issues, many people have expressed deep concern about the ability of science and technology to help identify society's problems, assess its resources, develop alternatives for solving problems effectively and enhance desirable opportunities.

There is much evidence to support the belief that alienation from decisions which affect communities is widespread and intense; that public disillusionment with established procedures for citizen involvement extends throughout all levels and all areas of social life. Public activism and apathy are seen as manifestations of disillusionment with traditional processes. Both have been attributed to frustration with the hierarchical and difficult nature of communication between individuals and organizations. Thus:

> **While there has been considerable speed-up of communication from the center of society out to the citizen, there has yet been little done to increase the speed of communications back into the center from the citizen; he is still expected to 'go through channels' with his inquiries, requests, complaints, suggestions and opinions.[1]**

The voting booth and the marketplace -- two traditional areas of individual involvement in societal decision making -- have been recently and increasingly identified as inadequate.[2] Society needs new mechanisms to improve the functioning of the market and political processes. For example, communities need better ways to draw citizens more closely into considerations of problems and options.

The apparent renewal of interest in regionalism, evident, for example, in the Federal government's revenue-sharing program, is viewed by many as a response to the demand for local control of publicly funded programs. Desire for increased local control can be seen as a result of attitudes among citizens that local government is more accessible and responsive than Federal government and that local problems are more tractable than national problems. New public institutions -- systems of community information and participation -- are emerging, made possible in part by what has been termed the "communication revolution."

Communities face two important needs which are not met adequately at present. First, in order to make informed decisions, citizens must understand what the problems are, who is working on them, what is being done, and how various possible alternative courses of action will affect their community. Second, to make wise decisions that require understanding of the range of community problems and issues, citizens should participate effectively in planning, choosing and implementing public policies. Fulfillment of the first need, understanding, is a requirement for the second, effective participation.

New efforts are under way to strengthen and clarify public understanding and participation in the resolution of community problems. Since public understanding and participation hinge upon effective communication, many new efforts are concerned with improving communication systems. The concept of community information exchanges[3] -- facilities which would provide residents of particular regions with an array of informational, technical and recreational services -- is one way to build communities based on active citizen interest and involvement. Appealing arguments have been made for the use of interactive communication media to promote communitywide dialogue and facilitate useful citizen involvement.

The subject of this report, community expositions, is one aspect of broader attempts to develop for communities new opportunities for popular communication and citizen participation.

2.0
THE CASE FOR COMMUNITY INFORMATION EXPOSITIONS

The information needed to promote widespread understanding of community problems and options is currently not presented in forms which are readily understandable and available to the general public as well as to government officials. Furthermore, there is lack of synthesis; reports on social matters come from so many sources, in such different forms, that critical relationships among problems and solutions are rarely demonstrated or understood.

Solutions to problems are seldom presented as part of a range of feasible alternatives, thus contributing to public feelings that very little real choice exists in resolving issues. Implicit assumptions, stressed values, and probable primary and secondary impacts of more than one solution are seldom presented for comparison. In large part, this is a problem of analysis and communication. It is not so much the case that options don't exist; rather, it is the case that they are not properly analyzed and communicated to citizens and other policymakers.

This chapter describes needs for synthesis and dissemination of comprehensive, easily understood information on community problems, opportunities and options, and then suggests a way to foster public understanding and participation through development of community information expositions.

2.1
SOME SHORTCOMINGS OF MASS PRINT AND BROADCAST MEDIA

Undoubtedly, conventional mass media reach the most people with the most information, and do so most quickly. Examples ranging from "all news" radio station broadcasts to "Sesame Street" show that a variety of information reaches many kinds of people.

nes Grashow HARPER'S

Information disseminated through mass media can be quite specialized, and may reach audiences with carefully selected characteristics. The special program "V.D. Blues," for example, effectively used popular musicians in a television entertainment format to educate vulnerable, afflicted or simply concerned persons about ways to avoid and treat venereal disease. A southern radio station, with nationwide broadcasting range, caters exclusively to the needs of "long haul" truck drivers.[1] Regularly broadcast programs, such as "The Advocates" on NET, and numerous local radio "talk shows," concentrate on contemporary social issues and encourage viewers to respond systematically to presented information, by voting, by expressing opinions, or by taking direct personal action.

Newspaper "action" columns (generally concerned with gripes about community services) are another example of attempts by conventional mass media to become more responsive to public information needs. In many cases they act as links between individual citizens and large organizations (both public and private).

Despite their unquestioned ability to reach many people and selected audiences, conventional mass media face serious constraints when it comes to long-term, effective citizen involvement in consideration of community problems and opportunities:

- Limitations on time and space make it difficult for mass media to consider more than one aspect of a particular problem. Related matters, if they receive consideration at all, can be treated only serially -- "tune in next week" and "see tomorrow's article" become common phrases.
- Techniques such as gaming and other methods of simulation, which require live situations or interactive capabilities, cannot be used in presently constituted mass media.
- Few opportunities exist for immediate citizen response to presented information; critical citizen feedback to policymakers is delayed and sometimes distorted, if not missing altogether.
- Access to broadcast media is limited and selective. Thus, certain views may receive more attention than others, with little regard for divergent views or important additional information.

Many people point hopefully toward two-way cable television as a way to facilitate more effective social communication. Some enthusiasts hail the emerging capabilities for electronic storage, retrieval and display of information as the key to a new era of "electronic democracy," where citizens may hear and be heard via sophisticated, interactive media and where the home may become an information and education center.

Such innovation as two-way cable television may provide society with greater amounts of more easily accessible and usable information; perhaps such media will also enable various levels of government to gauge more effectively the current of popular sentiments. There are, however, reasons to be more tentative and less optimistic:

- Cable television, even in rudimentary form, is a long way off for most communities.[2]
- Increased reliance on the home as a base of operations will not necessarily alleviate conditions of social alienation and community disintegration; it has been suggested that the opposite will occur.[3]
- No guarantees exist that new forms of mass media will be any more directed toward community problems and citizen feedback to policymakers than are current media.

The next section examines other important media and methods with potential for popular communication on community problems, opportunities and options.

2.2
MUSEUMS, TRADE SHOWS, WORLD EXPOSITIONS AND ENTERTAINMENT CENTERS

People also receive substantial information from sources other than print and broadcast mass communication media, which may be characterized as exhibit-like sources. It is important to examine and understand the potentials they offer to communities in need of better communication methods.

Museum of Science and Industry Chicago

Museums, world expositions, trade and agricultural fairs, which often adopt an "educational" posture, serve to transmit to the public information-packed images of society -- past, present and possible future. Disneyland, and now Walt Disney World, apart from serving as entertainment centers, create strong nostalgic ("Main Street") or alien ("The Jungle") images, and pictures of future worlds inspired by technological and social innovation ("Tomorrowland" and EPCOT, the Experimental Prototype Community of Tomorrow). World expositions also present ideas about society's problems and alternatives. Like several major museums, they have become showcases for a variety of futuristic imagery -- much of it derived from the work of architects -- R. Buckminster Fuller, Paolo Soleri, Moishe Safdie -- which then becomes part of a popular conception about technical choices society has at its disposal for dealing with human problems.

Perhaps because of the tremendous outlay of money, manpower and equipment required, trade shows, museums and expositions tend to present incomplete and deterministic views of society's problems and alternatives. It may be simply "too expensive" to undertake all that is necessary to include all the options; those which are included are only those for which sponsors can be found (e.g., General Electric's "pushbutton living" exhibits at Disneyland). In many cases, there is failure to examine and demonstrate the range of impacts of certain advocated solutions or innovations.

As communication environments, those places are extremely stimulating and engaging and hence may be more effective than print and broadcast media if they are focused more on community problems and options.

Such is apparently the reasoning behind the concept of community decision centers or "social planetariums," devised by Harold Lasswell of the Academy for Contemporary Problems (Columbus, Ohio).[4] He envisages such places as analogous to astronomical planetariums. They would convey to people, through a variety of sophisticated communication techniques, a sense of the past and potential future environments in much the same manner as a "war room" or "situation room" portrays simulated situations for military strategists.

All these operations and ideas are related to the concept of community information expositions, which consist of issue-oriented displays and which seek to increase popular understanding of, and dialogue on, social problems through interactive electronic technology, gaming, simulation, and person-to-person communication.

2.3
THE ROLE OF COMMUNITY INFORMATION EXPOSITIONS

The foregoing comments on community needs and currently popular communication methods indicate a need and opportunity to develop new activities which synthesize and communicate problems and options, and strengthen citizen participation.

Interactive display media -- exhibits -- offer an important and underused resource to popular communication on problems, options and opportunities of contemporary society. Unlike mass media, exhibits need not be severely limited in their use of communication techniques; they permit greater degrees of interaction with information and information sources. (Obviously, also unlike mass media, exhibits do not "reach" tremendous numbers of people within a short time period, although they can reach millions within the course of a year).

One way to employ interactive display media in meeting information and participation needs of specific communities is to create expositions on regional problems and options[5] in which:

- Organizations -- involved in the identification and solution of problems -- can communicate their perception of problems and the nature of solutions they are attempting to implement, and can learn of public attitudes related to their work; and
- Citizens can experience a sense of what the problems and alternatives are, discuss issues, register their attitudes and compare them with attitudes of others.

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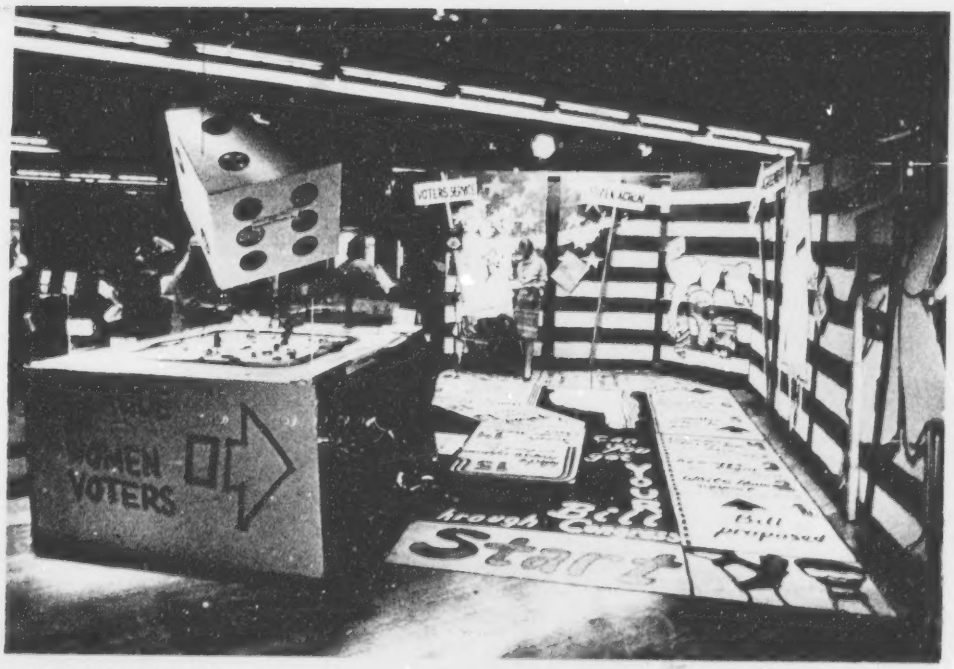
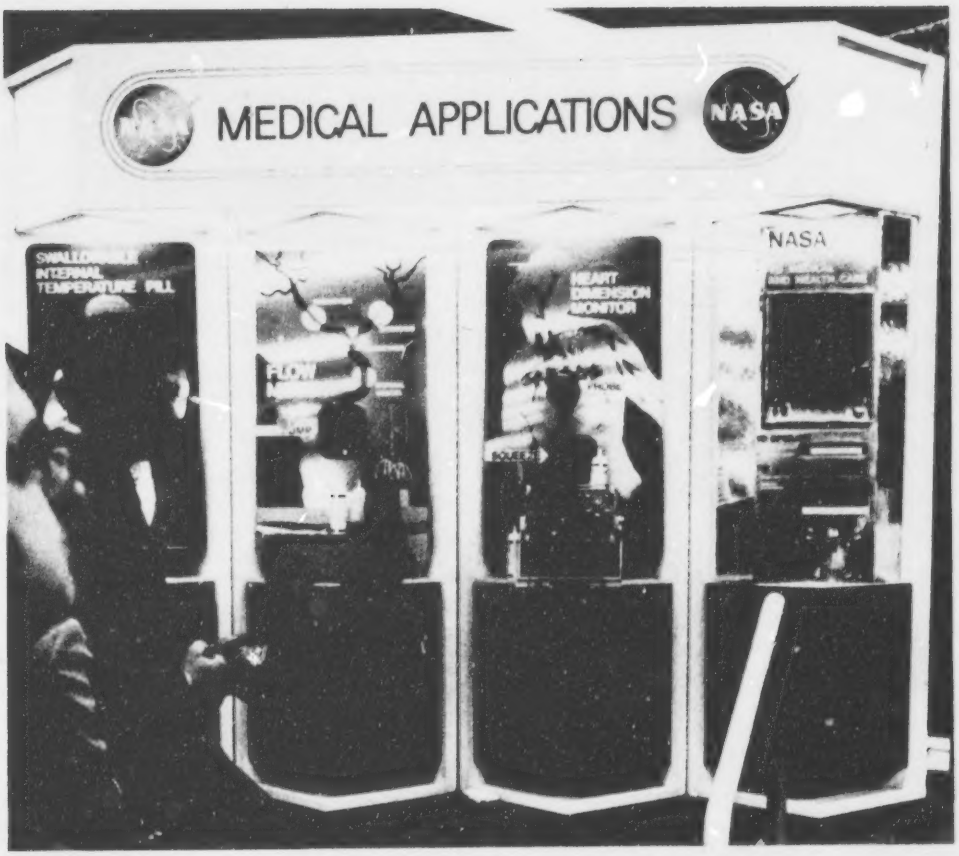
The term "interactive" describes two discrete but related elements of such an exposition. First, exhibit media which engage participants, and require from them a high degree of physical and mental involvement, are likely to communicate more effectively. Second, community expositions can foster dialogue among citizens, experts and government officials, out of which should come better popular understanding of issues and policies.

There are few, if any, examples of attempts to achieve the fundamental objectives of analysis, communication and participation in an interactive display format. The community exposition, "Capital City Readout," is one recent example described in the next chapter.



Link Harper, Washington, D.C.

Exhibit prepared by the League of Women Voters for the AAAS exposition.



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COMMUNITY INFORMATION EXPOSITIONS

RECORD OF AN EXPOSITION

3.0 CAPITAL CITY READOUT, AAAS POPULAR EXPOSITION IN WASHINGTON, D.C.

During its December, 1972, annual meeting in Washington, D. C., the American Association for the Advancement of Science (AAAS) offered to citizens of the region an exposition on the role of science and technology in addressing local social problems. Using a variety of communication techniques in exhibits, 40 public and private organizations portrayed problems of the region and efforts being made to solve them. Organizations and their exhibits were grouped into three theme areas:

- Planning for social, physical and technical resources.
- Community health and well-being.
- Use, operation and management of natural resources.

To involve visitors further in considering policy-oriented exhibits, organizers of the exposition prepared a ballot on 22 issues, which allowed visitors to register their responses to topics raised in the exhibits.

Over 5000 people attended the exposition, "Capital City Readout," which remained open to the public for five days and four nights. This chapter describes the objectives, development, organization and physical design of the exposition as well as the participants, their contributions and activities.

3.1 OBJECTIVES AND GOALS

Our ultimate objectives were to:

- Increase citizens' understanding of the nature and scope of community problems, resources and opportunities.
- Increase citizen participation in identifying and solving problems and developing opportunities.
- Increase people's understanding of both the beneficial and detrimental aspects of science and technology in society, and thereby
- Increase public appreciation of the role of science and technology in aiding community efforts to identify and solve problems, provide options, and develop opportunities.

The goals of Capital City Readout were to:

1. Establish a new mode of communication on current and specific social issues confronting a particular metropolitan region and demonstrate the viability of such expositions.
2. Present a balanced approach to a number of important problems of the region, and do this from the viewpoint of organizations working to identify and solve problems in their social context.
3. Provide an opportunity for person-to-person communication between members of the public and representatives of organizations about displayed information.
4. Enable citizens to register their views on issues raised by the exhibits and to report these views to exhibiting organizations.
5. Develop organizational procedures and communication techniques for use in other regional information centers.
6. Stimulate subsequent similar efforts in other communities by exposing scientists, engineers, educators, government officials, media representatives and citizens to an example of problem-oriented communication.

The strategies employed to meet these goals included efforts by the exposition coordinators to:

- Seek out organizations with opposing views and encourage them to participate. (goal 2)
- Make organizational representatives available at each exhibit. (goal 3)
- Develop a ballot on current issues of concern to local residents and institutions. (goal 4)
- Produce a report on the event and disseminate it to people who share an interest in the results. (goal 5)

3.2 EXHIBIT CRITERIA

On the basis of the project's objectives, the exposition organizers established guidelines for development and sponsorship of exhibits. To be approved for use in the exposition, each exhibit had to be:

- Sponsored by an organization with local concerns and programs;
- Attended at all times by at least one representarive of the sponsoring organization; and
- Focused on a specific problem, and on efforts being made to solve it, in one of three theme areas (see the introduction to this chapter for the list of theme areas).

Many sponsoring organizations had concerns and programs which were broader and more numerous than those they presented at Capital City Readout; however, project organizers felt that they would obtain better exhibits if organizations limited the scope of their exhibit coverage.

3.3 DEVELOPMENT

A working team composed of five members, each with separate but related responsibilities, carried out the project. A three-member editorial committee[1] was established to develop and refine project communication objectives, determine and interpret policy, assist in preparation and review of public statements concerning the exposition, and review and evaluate the applications submitted by organizations interested in participating.

In addition, two full-time project coordinators[2] shared responsibilities to develop interest among a range of local organizations, follow up with most promising potential participants, assist participants with display techniques, plan and design layout of the exposition site, plan and design the citizen feedback device (issue ballot book), and function as executive staff to the editorial committee.

Preparation for the exposition required eight months, although it could be done in less time (see section 4.2), and involved five major steps:

- On the basis of objectives for the exposition, the organizers formulated an initial list of 200 potential participants, and mailed letters which explained the exposition concept and invited organizations to participate.
- The coordinators began discussions with interested respondents to the initial mailing. Suggestions made by several of these contacts led to approximately 50 more organizations (usually volunteer citizens' groups) not included on the initial mailing list.
- Interested organizations received application forms requesting that they (1) state the nature and objectives of their organization, (2) identify the problem, and efforts being made to solve it, they wished to examine, (3) explain the proposed intent and design of their exhibit.
- The coordinators and the committee met almost weekly for three months (beginning approximately five months before the exposition) to act on applications. No applications were accepted after one month prior to the exposition, which was somewhat later than orginally anticipated.
- Groups whose applications gained approval received notices of acceptance. The editorial committee sent suggestions for improvement and invitations to resubmit to groups whose applications failed to meet exhibit criteria. The AAAS received approximately 60 applications; 40 gained final approval.

Project coordinators carried on intensive discussions with participants until the time of the exposition, and provided exhibit design assistance to organizations requiring it. Planning of the exposition site, design of the ballot book and preparation of local promotional campaigns occurred during the same eight month period.

3.4
EXHIBITS AND SPONSORS

Forty organizations participated in Capital City Readout. Exhibits were located in the exposition hall according to their relevance to one of three theme areas. Exhibit sponsors and the location of their exhibits are shown in the diagram.

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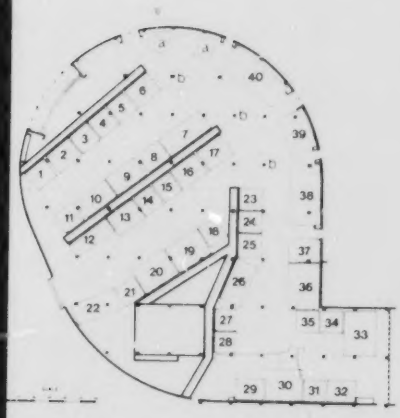
Appendix I contains detailed descriptions of the concerns, content, cost and size of each exhibit.



PLANNING FOR SOCIAL, PHYSICAL AND TECHNICAL RESOURCES

○●1. COALITION ON OPTIMUM GROWTH (CO-OPT) problems of urban growth, development and congestion
○●2. CITIZENS TRANSPORTATION COALITION citizen participation in regional transportation planning
3. FEDERAL CITY COLLEGE SCIENCE VAN inner city science education and environmental monitoring
●4. DISTRICT OF COLUMBIA REDEVELOPMENT LAND AGENCY urban renewal and reconstruction
○●5. GEORGE WASHINGTON UNIVERSITY DEPARTMENT OF URBAN AND REGIONAL PLANNING planning neighborhoods
○●6. LEAGUE OF WOMEN VOTERS OF THE NATIONAL CAPITAL AREA voter education and citizen participation
○●7. ARLINGTON COALITION ON TRANSPORTATION transportation planning and protection of natural resources
8. NATIONAL CAPITAL PLANNING COMMISSION development of the Potomac River
●9. UNITED STATES NATIONAL PARKS SERVICE summer urban recreation programs for the District of Columbia
○●10. WORLD FUTURE SOCIETY the influence of present trends and activities on the future
11. WASHINGTON TECHNICAL INSTITUTE human resources dimension of Washington area problems

USE, OPERATION AND MANAGEMENT OF NATURAL RESOURCES

12. UNITED STATES ATOMIC ENERGY COMMISSION nuclear reactor power plant licensing procedures
13. UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF MINES solid waste recycling potential
14. CHESAPEAKE AND POTOMAC TELEPHONE COMPANY mineral resource conservation
○●15. CENTER FOR SCIENCE IN THE PUBLIC INTEREST reordering regional scientific priorities
○●16. SIERRA CLUB, POTOMAC CHAPTER strip mining and pollution of the Chesapeake Bay
●17. WASHINGTON GAS LIGHT COMPANY the natural gas shortage
○●18. CHESAPEAKE BAY FOUNDATION ecology in the Chesapeake Bay
●19. UNITED STATES NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION monitering of urban weather
●20. DISTRICT OF COLUMBIA DEPARTMENT OF ENVIRONMENTAL SERVICES solid waste analysis and treatment
○●21. CONCERN, INCORPORATED the qualitiy of local drinking water and other urban services
22. POTOMAC ELECTRIC POWER COMPANY (PEPCO) energy policy and the consumer

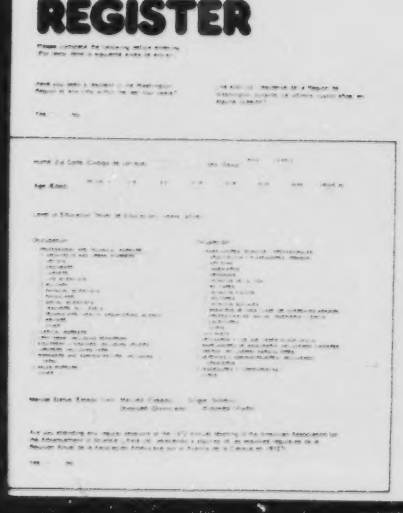
COMMUNITY HEALTH AND WELL BEING

●23. PRETERM private, stress-free abortion services
24. AMERICAN NATIONAL RED CROSS blood donation and hepatitis
○●25. PLANNED PARENTHOOD OF METROPOLITAN WASHINGTON, D.C. contraception and the control of birth rates
26. UNITED STATES NATIONAL AERONAUTICS AND SPACE ADMINISTRATION medical applications of space hardware
○●27. MITRE CORPORATION interactive cable television for urban communities
○●28. WOODROW WILSON INTERNATIONAL CENTER the needs and characteristics of local Latin Americans
29. ANACOSTIA NEIGHBORHOOD MUSEUM, SMITHSONIAN INSTITUTION contributions of blacks to science
○●30. NATIONAL CAPITAL AREA CHILD DAY CARE ASSOCIATES comprehensive child development
○●31. UNIVERSITY OF MARYLAND INSTITUTE FOR CHILD STUDY child classroom behavior and teacher training
●32. APPLIED URBANETICS investments in and results of drug abuse treatment programs
33. UNITED STATES NATIONAL BUREAU OF STANDARDS large research organizations and social concerns
●34. DISTRICT OF COLUMBIA DEPARTMENT OF HUMAN RESOURCES the provision of comprehensive social services
●35. GEORGETOWN UNIVERSITY PUBLIC SERVICES LABORATORY lead poisoning among local children
36. UNITED STATES DEPARTMENT OF HEALTH, EDUCATION AND WELFARE development of aids for the handicapped
○●37. WASHINGTON CENTER FOR METROPOLITAN STUDIES regional demographic patterns
●38. UNITED STATES BUREAU OF THE CENSUS the uses of census data
39. UNITED STATES GOVERNMENT PRINTING OFFICE reading material oriented to exhibit topics
●40. DISTRICT OF COLUMBIA PUBLIC LIBRARY VIDEOTAPE CENTER recordings of related lectures and symposia
a. CHRYSALIS CORPORATION MEDIA BALLOONS related movies and slide presentations
b. ISSUE BALLOT DEPOSITORIES

● = EXHIBITS PREPARED ESPECIALLY FOR USE IN CAPITAL CITY READOUT
○ = RECIPIENTS OF FINANCIAL AID FOR PREPARATION OF EXHIBIT

3.5
INTERACTIVE PROCEDURES

Capital City Readout had two major interactive components. First, representatives of sponsoring organizations attended all exhibits. Thus, visitors had an opportunity to seek direct personal dialogue with knowledgeable individuals, and, where necessary, to seek clarification of information presented in exhibits. Organizational representatives were sometimes present in order to assist visitors with operation of special equipment, as in the cases of the Bureau of Census and the National Oceanic and Atmospheric Administration. Attendants also advised interested citizens on how to join an organization, where to go for further information, and how to take advantage of various services and programs.



Second, each visitor received, upon entering the hall, a booklet containing 22 statements on topics of current local interest, many of which received attention in exhibits. By tearing a stub from the booklet and placing it in the appropriate container, (see picture below), visitors could ostensibly make known, to exhibiting organizations, their views on local issues ranging from dispensation of methadone to heroin addicts to curtailment of freeway construction. Some 2200 visitors performed the balloting operation.

Local residents received yellow ballot booklets and visitors from out of town received green, so that differences of opinion based upon residency might be revealed in result tabulations. One thousand of the booklets (500 green and 500 yellow) were coded to correspond to personal profiles of respondents, which were obtained through registration forms provided at the hall entrance. The profiles contained information on most of the independent personal variables used in standard statistical surveys, including age, sex, marital status, level of education, occupation and residency.

Charles del Vecchio, THE WASHINGTON POST

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It is important to note here that unfortunately the ballot consisted of rather hastily assembled and informal statements and in no sense constituted a professional attitude survey instrument such as social psychologists use. For that reason, we offer it here as primarily a technique -- and a valuable one-- for enhancing interaction. The ballot coupons and the tabulated responses are given in detail in Appendix 2 and, while interesting interpretations of the results are possible, no scientific validity whatsoever can be ascribed to any such interpretations. The potential value of reliable information gained through a good survey instrument would, of course, be enormous to citizens and to institutions serving them. These and related matters are discussed in later sections.

3.6
PROMOTION

Because Capital City Readout sought to attract a large and diverse audience, the project coordinators used various promotion techniques. The context of the 1972 Annual Meeting provided an opportunity for advance notice to reach a national audience through articles and announcements placed in various regular AAAS publications:

- Science magazine, which has a weekly circulation of 160,000, published several notices and a statement prepared by the project coordinators, which described concerns to be addressed by the exposition.

- AAAS Bulletin, a newsletter mailed to 130,000 Association members, published an article about the exposition. The article included descriptions of several exhibits being prepared by local organizations.

- AAAS Annual Meeting Program, distributed to approximately 9,500 meeting attendees and others, contained articles about the exposition, a full list of participating organizations and a description of topics to be treated by exhibits.

The exposition's focus on local concerns led to interest among local print and broadcast media. In addition to publicity gained through coverage of opening day activities on television newscasts, and in daily Washington newspapers, the exposition received advance promotion through local radio "talk shows" in which the project coordinators participated. Articles and announcements concerning the exposition appeared in newsletters and magazines circulated by organizations participating in the event, including among them Planned Parenthood, the World Future Society, the Sierra Club, and the Center for Metropolitan Studies. Articles from Science, the Washington Post and Evening Star are reprinted in Appendix 5.

The project coordinators used several other local promotion techniques for the popular exposition:

- The Smithsonian Associates and the Washington Center for Metropolitan Studies, whose combined mailing lists carry a total of over 12,000 names and addresses, mailed leaflets describing the exposition and inviting attendance.

- The Woodrow Wilson International Center distributed leaflets printed in Spanish to local Latin American residents.

- Elementary and secondary schools in the District of Columbia and surrounding Maryland and Virginia counties distributed promotional packages to students. 10,000 packages reached 600 schools throughout the region. Each contained prepared statements for teachers to read to their students, posters and leaflets describing the exposition, and a registration form which enabled students with special interests to receive further information.

3.7
STAFFING

It is customary for high school science departments from the host metropolitan region to enlist volunteer student aides for use as guides during the AAAS Annual Meeting. After a short briefing on the exposition, volunteers from among these aides answered visitors' questions, and provided assistance with the distribution of registration forms and issue ballots. Several aides, also recruited through local high school science departments, received payment to assist organizations with moving and installing exhibits.

All student aides wore white laboratory coats with the words "Capital City Readout" printed in large letters on the back, which helped visitors to identify them as information sources. A similar technique is used by the Exploratorium in San Francisco, California, a science museum which encourages young visitors to explore exhibits freely; wearing bright red coats, students from the region are hired to act as "explainers," and can be approached by visitors seeking information on various exhibits. Exposition aides could simply have coats with the request "ask me" emblazoned on them. Five aides were on duty (at various stations in the hall) for the eight hours each day during which the exposition was open to the public.

3.8
COSTS AND FUNDING

Direct costs for Capital City Readout totaled approximately $22,000, exclusive of exhibit costs, for which most of the participating organizations paid (16 non-profit and volunteer organizations received grants of $200.00 each from the AAAS for preparation of exhibits). All funds for the project were transferred from areas within the annual operating budget of the AAAS.

A schedule of estimated income and direct expense figures appears below. Costs not included in the total are for time of the editorial committee (estimated at about 500 man hours) and for office overhead.

SALARIES (two full time coordinators for 8 months)		$10,752.96
OPERATIONS		
Clerical and miscellaneous services	$ 624.73	
Project coordinators' travel	510.33	
Supplies for exposition hall	4,132.11	
Printing (ballot book, posters, leaflets)	2,206.36	
Postage, telephone, books and publications	861.72	
Grants to volunteer and non-profit exhibitors	3,200.00	
		$12,535.25
TOTAL		$22,288.21

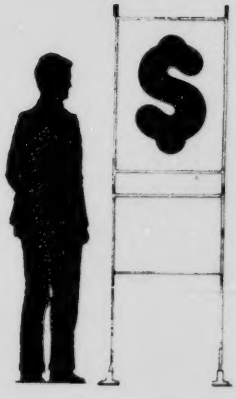

Exhibit costs ranged from $200.00 for "home-made" types to over $200,000.00 for professionally designed and constructed displays. Appendix I contains information made available by sponsors about the costs of their exhibits. Several exhibitors compensated for a relative lack of finances by investing great amounts of time in exhibits. Construction of CO-OPT's puppet show, for example, required over 200 hours of one person's volunteer labor. Members of the League of Women Voters built their legislation game over the period of a week, in a volunteer's basement.

In most cases, grants of $200.00 barely covered expenses for exhibit materials and they allowed absolutely no compensation for time spent by individuals; members of several volunteer and non-profit organizations expressed dismay at this, and said they would be reluctant to participate in such an effort again unless more funds were made available to them.

3.9
PROBLEMS, PITFALLS AND LESSONS LEARNED

Mainly due to amounts of time, money and prior experience there were some oversights and deficiencies in planning, which were reflected in the exposition.

- The exposition lacked complete cohesiveness and unification; exhibits did not present a synthesized view of local problems, options and opportunities.

- A few exhibits did not address local concerns; many did not identify and communicate salient aspects of community questions likely to be of significant interest to local residents.

- Citizen feedback on policy issues, and its potential uses, received insufficient attention during planning stages; thus,

- Issue ballots were difficult and time-consuming to count; several contained ambiguous and biased statements, which undermined their potential usefulness for accurately evaluating citizen attitudes.

In short, the exposition organizers lacked sufficient resources to identify properly, and plan for, potential hazards. They occasionally found it necessary to opt for the expedient in lieu of the preferred.

The opportunity to prepare this report has allowed us to study and reflect on many things which should have been considered and resolved before the exposition reached implementation stages. Chapter 4 examines in detail some grounds on which to evaluate Capital City Readout, and, in so doing, demonstrates lessons learned.

Link Harper, Washington, D.C.

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4.0
EVALUATION OF CAPITAL CITY READOUT

It is difficult to know how best to evaluate such a communication effort; many things can be measured easily, and some apparently cannot. Of course, readily measured aspects often provide only part of the information needed for evaluation. Museums, for example, generally measure various dimensions of attendance[1] -- numbers of visitors and, where possible, their demographic characteristics and length of stay in the building -- but few would defend such measures as trustworthy indicators of educational merit or amount of information communicated.

Psychologists, sociologists and environmental designers have taken increasing interest in scientific exploration of human behavior in museum settings.[3] Literature in the field is vast.[2] It discusses the evaluation of exhibits from many viewpoints, ranging from surveys of viewer attitudes toward exhibits to unobtrusive observation of social interaction among museumgoers. Such research and evaluation techniques require substantial investments of money, apparatus and labor in order to plan, measure, document, analyze and report.

Few, if any, public information expositions have been designed or observed with scientific rigor, possibly because to do so has not been among the objectives, nor within the financial capabilities, of organizers, or because the pressures of a tight schedule make evaluation impossible. Aside from the intent to count ballots cast by citizens on a variety of local issues and to report results to interested organizations, evaluation of Capital City Readout received little consideration during planning stages because planners had insufficient time. Even so, Capital City Readout can be evaluated in several ways.

Perhaps the most important question to ask is: What (and how) did people learn from exhibits? While we cannot completely answer this question, we can show that citizens and organizations were interested, participated in, and benefited from the exposition. This section considers generally some evidence available from Capital City Readout, which can be used to evaluate and draw conclusions about the success of this endeavor and needs of similar future events.

4.1
ATTENDANCE

The figures below represent only those 4275 individuals who completed registration forms. Security guards and persons distributing registration forms at the entrance estimated a larger total of 5500 visitors (approximately 30% above the total registered). Naturally, the reliability of such estimates is open to question, due to the possibility of repeat visits and natural errors in casual counting procedures.

DAILY REGISTRATION

	Hours Open	Total	Registrants	Avg. per Hour	Per Cent Total
Tue. 26 Dec.	1 PM - 9 PM	8	1009	126	23.61
Wed. 27 Dec.	1 PM - 9 PM	8	856	107	20.02
Thu. 28 Dec.	1 PM - 9 PM	8	526	66	12.30
Fri. 29 Dec.	1 PM - 9 PM	8	622	78	14.55
Sat. 30 Dec.	10 AM - 6 PM	8	1262	158	29.52
TOTALS:	5	40	4275		100

Average per day - 855
Average per hour - 107

The figures reveal some useful information. A peak in attendance occurred on Saturday. Observers agree that most "community visitors" (i.e., non-AAAS members) attended on the weekend; families were most in evidence at this time. Exposition staff and personnel manning the exhibits thought that daily attendance was highest about the noon hour on Saturday and about 1 PM on weekdays, and that numbers declined steadily toward evening. Total attendance was about one-half the anticipated number.[4] Despite rather extensive local promotion efforts, only slightly more than one-half the 5000 or so visitors were not affiliated with the AAAS and its annual meeting. The exposition was expected to reach substantial numbers of people; results were somewhat disappointing. There is some reason to expect that all attempts of this sort should expect such results.[5]

As is true in many institutional attempts to communicate with people outside the context of immediate personal needs and desires, the exposition organizers relied much on the use of advance publicity to persuade people to attend: local media were contacted and most granted requests to devote space or air time to the exposition. "Community Bulletin Boards" in newspapers and on radio carried advance public notice of the exposition. The attendance figures show that it is probably unwise to place great faith in the power of mere announcements in the media to draw attendance. Most of those responsible for the project believe that low attendance figures resulted from three main factors:

- The exposition was inappropriately located in a hotel used primarily for conventions, rather than in a recognized community center.[6]
- The exposition was of relatively short duration.
- The promotional material did not sufficiently intrigue members of the population we sought most to attract, and did not adequately convey to people the exposition's objectives.

Potential solutions to these and other related problems are given detailed consideration in Chapter 4.

4.2
COMMENTS FROM PARTICIPANTS

Following the exposition, the authors mailed informal questionnaires to participating organizations, requesting that they:

- Assess the public educational value of their exhibits;
- Describe impacts (if any) of the exposition on their operations;
- Assess the value of the entire event in terms of public response and most effective exhibits; and
- Suggest ways to improve future "information exchanges."

Requests for follow-up comments from participants met with only scattered response. Significantly, most of those organizations who did reply were smaller ones, many of which were non-profit and/or volunteer, and most of which had little or no prior experience with exhibits. Several governmental exhibitors also replied, most notably the Department of Health, Education and Welfare and the Bureau of Mines; but response from other larger organizations was weak. Exposition planning stages reflected a similar difference in the nature and number of responses from large as compared to small organizations; smaller organizations, without existing exhibit programs, were generally far more interested in meeting exhibit criteria (see part 2.2) than were larger organizations, many of which already had exhibits and were convinced that these would suffice.

A selection of participants' comments is presented here, arranged according to the four areas mentioned above.

1. Discuss the educational content and value of your exhibit. Did visitors learn about programs and goals fostered by your organization? Could a member of the general public make intelligent issue decisions on the basis of information conveyed through your exhibits?

"...most visitors to our booth spent most of their time asking questions and filling out information request cards. It seems likely that visitors would be likely to make more intelligent issue decisions after this contact."

- U.S. Department of Interior, Bureau of Mines

"We feel the general public could make intelligent decisions about planning their families, the best methods of contraception to use, and where to go for this service."

- Planned Parenthood of Metropolitan Washington, D.C.

"It was our intent that members of the public would be able to make an intelligent and thoughtful decision about abortion on the basis of information displayed. However, with abortion continuing to be such an especially sensitive issue, it may be more realistic for us to hope we were able to provoke, if not decision, at least more awareness."

- Preterm

...IT MAY BE MORE REALISTIC FOR US TO HOPE WE WERE ABLE TO PROVOKE, IF NOT DECISION, AT LEAST MORE AWARENESS. (14)

2. Describe any ways in which participation in Capital City Readout has affected (or will affect) policies, programs and/or operations in your organization. Has the exhibition had any impact of a lasting nature? Discuss any "peripheral" benefits the exposition may have brought to your organization.

"It was good for our organization to specifically list the problems in the District addressed by its centers, and to prepare maps. This has helped us to realize what our programs are providing, and many of the materials can be used in other exhibits...(and) will be useful for years to come"

- Planned Parenthood of Metropolitan Washington, D.C.

"(We know of) no effect other than several new contacts made with others in the recycling field, which have been followed up by visits or correspondence."

- U.S. Department of Interior, Bureau of Mines

"(We) want to explore the possibility of building on our experience with this display for a week-long open house exhibit in the HEW North Building. We also have to presume involvement by HEW during the 1976 Bicentennial Celebration, when 10 million visitors are expected in Washington. Almost certainly the D.C. Bicentennial Commission will ask major Federal departments to consider some kind of visitors' display. It is hard to justify the fact we are not doing something like this already."

- U.S. Department of Health, Education and Welfare

...CAPITAL CITY READOUT CERTAINLY PLAYED AN IMPORTANT ROLE IN THE ACCUMULATION OF EVENTS LEADING TO THE STUDY AUTHORIZATION

"In general, we can say that the Capital City Readout was a helpful forum for some of the ideas we have been pursuing with the Southeast Community. As a result of the exposure to the METRO planning effort, members of the District Government and the Government of Prince George's County were persuaded to request WMATA to study the Branch Avenue Line in the light of suggested alternatives. This is the first such study authorized by WMATA and while Capital City Readout may not have been the major contributing factor, it certainly played an important role in the accumulation of events leading up to the study authorization. Any exposure to our efforts and those of the Southeast Community are beneficial and we did receive inquiries from a number of people who wished to pursue further the details of our activities."

- George Washington University
Department of Urban and
Regional Planning

3. Assess the value of this kind of exposition in terms of public response. What kinds of people seemed to visit your exhibit? How did they appear to react to what they were seeing?

"In general, people visiting our booths were those attending the meetings rather than the general public. This was something of a disappointment to us because we were particularly interested in reaching Washingtonians. It is also puzzling because publicity for the event was good."

- Planned Parenthood of Metropolitan Washington, D.C.

"Overall, attendance at the exhibit was less than we had anticipated. More advertising in the papers and on television might have attracted more local attendance."

- World Future Society

"Our visitors included all varieties -- students, medical doctors, reasearch workers and utility executives. In general, the people who viewed our exhibit were ordinary citizens; very few seemed to be scientists. Nearly all were very enthusiastic and asked many questions."

- U.S. Department of Interior, Bureau of Mines

"Scientists and science students."

- U.S. Department of Health Education and Welfare

"Visitors to our exhibits were professionals in family planning, M.D.'s, nuclear physicists, young people and anti-abortion activists."

- Preterm

4. Suggest ways in which your organization might be willing to participate in future public events like Capital City Readout. Define the problems you feel would have to be resolved in order to make the event more worthwhile.

"...future exhibits of this type (should) have less participation by government agencies and institutional exhibitors...a smaller exhibit with some key points might be more effective. It may be useful to have nearby rooms available for small talks and discussions."

- World Future Society

"(We) would suggest more well-rounded involvement from the community."

- Preterm

"...a snack bar at the exhibit would have been appreciated by many exhibitors and visitors."

- U.S. Department of Interior, Bureau of Mines

With a few exceptions, exhibitors enjoyed participating in Capital City Readout, and felt that the experience was worthwhile. Also apparently unanimous among exhibitors was the feeling that attendance should and could have been better. The seemingly contradictory comments about the nature of people who attended the exposition may be explained by the following:

- Different organizational representatives manned exhibits at different times of the day; those responding to the informal questionnaire were probably in the exposition hall at different times, and thus may have gained different impressions.
- Individual exhibits probably attracted individuals with advance interest in subject matter being presented; this process of audience selection may have led observers to decide (incorrectly) that those who visited their exhibits were representative of the entire audience.

4.3
AN OPINION SURVEY BY THE ATOMIC ENERGY COMMISSION

Out of interest in the exposition and concern for public response to its programs, the Atomic Energy Commission (which was one of the exhibitors) had 23 staff members attend Capital City Readout and subsequently asked them to answer a series of questions about the exposition. A member of the Atomic Energy Commission's staff prepared the following summary of results from the questionnaire. It is presented here as additional evaluative information.

Number Surveyed:	18	- From the Division of Biomedical and Environmental Research (DBER)
	1	- From the Oak Ridge Associated Universities (ORAU)
	4	- From the Office of Information Services (OIS)
Total:	23	
Approach Used:	6	- Interviewed in person or by telephone.
	17	- Completed questionnaires.

Questions and Responses:

1. What was the quality of the attendance at the exhibit? In other words, would you say there were many people from off the street visiting the exhibits, or would you say most of them seemed to be AAAS types?

   The majority of those interviewed expressed the opinion that most the attendees were AAAS types.

2. What use of the ballots did you observe? How seriously were the ballots being used?

   Ten of those surveyed made no observation or had no comments. The majority of those responding to this question felt that there was no significant use being made of the ballots or that they were being used with little forethought. One person expressed the feeling that the ballots were being used, seemingly seriously, but were being cast before visiting the exhibit area. Another interviewee stated that there was much activity putting ballots in cans with little or no discussion of balloted issues. He stated that no questions or discussions were asked of him, or of PEPCO's staff, concerning the metropolitan siting proposition (Question No. 20 in the ballot book).

3. How many people attended? Do you feel the attendance was high or low?

The consensus of opinion was that attendance was low. Several compared the attendance to other meetings they had attended and a few others stated that they were there only in the evening or on the first day and therefore couldn't properly answer the question.

4. What type questions were asked at the Atomic Energy Commission exhibit? Generally, what was the reaction to our exhibit? Were most visitors friendly or antagonistic?

Most persons interviewed felt that the majority of the visitors to AEC's exhibits were friendly and interested. Persons visiting the "From Molecules to Man and His Environment" exhibit showed considerable interest in, and asked questions about, the cloud chamber and the radiation level display. Other questions concerned printed material. One person interviewed expressed his opinion that about 80% of the visitors were antagonistic. Two others indicated that they experienced antagonistic visitors and others that were skeptical.

5. What was the quality of other exhibits?

Generally, the opinion of those surveyed was that the quality of exhibits varied, from "excellent" to "poor", and that imagination and creativity were decisive factors, rather than money invested.

6. Do you have any other comments you would like to make?

Most of the additional comments concerned a feeling that attendance and effectiveness of AEC's exhibits were unfavorably affected by poor location in the exhibit hall.

4.4
SOME COMPARISONS OF EXHIBITS

Exhibits are usually evaluated by professionals from one or both of two perspectives:

- Influence on visitor behavior, as measured by the ability of exhibits to attract and hold attention, shape social groupings and interaction, and elicit other significant physical responses; and
- Influence on visitor attitudes, as measured by the amount and accuracy of information imparted, changes in visitor opinions and viewers' feelings toward "experiencing" exhibits.

The following list of criteria for evaluating exhibits, from a study of various Atomic Energy Commission exhibits[7] should indicate the range of areas currently considered by professionals.

- Attractiveness of Exhibit
- Ease of Comprehension
- Unity within the Exhibit
- Ability to Attract Attention
- Ability to Hold Visitor Interest
- Appropriateness of Exhibit Presentation
- Accuracy of Information Presented
- Location and Crowd Flow
- Visitor Characteristics
- Focus of Attention
- Textual Material (labels, headings, etc.)
- Relation of Exhibit to Surrounding Area and Other Exhibits
- Design of Exhibit
  - Size
  - Physical layout
  - Use of color
  - Use of light
- Exhibit Items
  - Quantity
  - Attractiveness
  - Size
- Communication Techniques
  - Sound
  - Motion
  - Demonstrations
  - Charts
  - Film
  - Models
  - Auxiliary teaching techniques
  - Audience participation

Because Capital City Readout was staged with insufficient funds and preparation time to permit rigorous evaluation of exhibits in the conventional sense, only observers' opinions are available to judge exhibit effectiveness.

A comment from one representative of the Atomic Energy Commission expresses well the sentiments of many who observed and contributed to the project:

> "Some of the best exhibits and some of the worst were crude. Some offered much imagination and [illegible] were best attended and got their story across. There appeared to be no relationship between effectiveness and investment in the exhibit. What counted were the ideas, the imagination, and the people involved."

WHAT COUNTED WERE THE IDEAS,

THE IMAGINATION,

AND THE PEOPLE INVOLVED.

Among the relatively crude and inexpensive (less than $250 construction costs) exhibits which attracted and sustained great visitor attention were:

- A legislation game devised by the League of Women Voters, in which visitors rolled dice and walked through a series of squares representative of stages in "getting your bill through Congress;"
- A display of contraceptive devices prepared by Planned parenthood; and
- A puppet show titled "Don't Sleep While the Bull Dozes," produced by Co-Opt (Coalition on Optimum Growth), which dramatized the causes of urban congestion.

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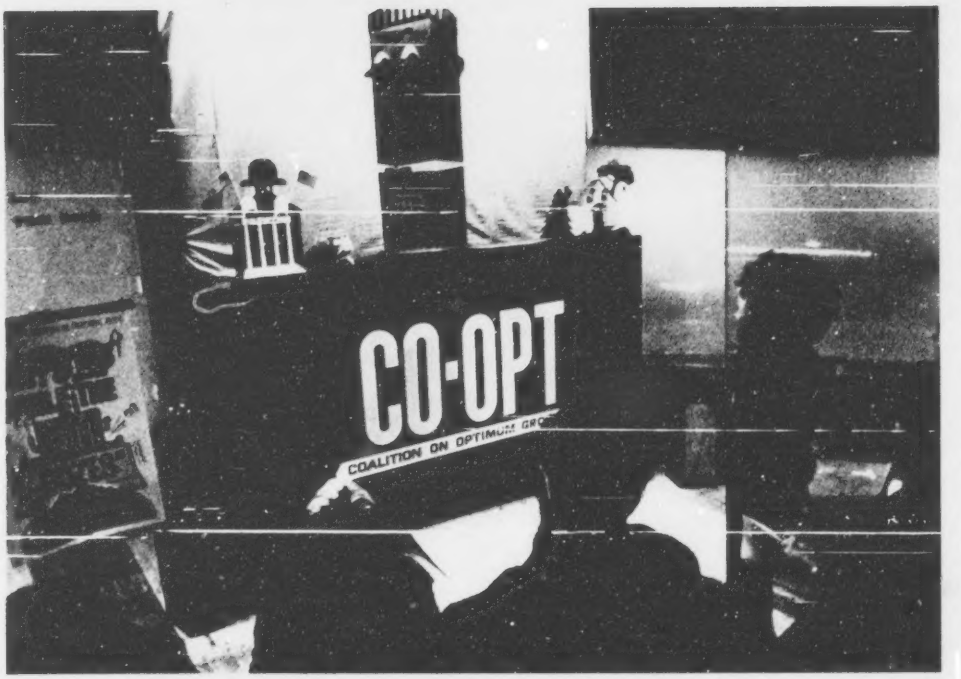

Link Harper, Washington DC

Certain intermediately elaborate exhibits (costing between $250 and $1000, exclusive of costs for equipment) also appealed to visitors strongly. These included:

- A living-room mockup, prepared by the Mitre Corporation, in which visitors could sit on chairs or couches and experiment with interactive cable television equipment;
- A mockup of an abortion clinic reception room, prepared by Preterm, in which visitors could study literature, photographs and a short slide presentation about abortion procedures;
- A pair of air-inflated bags by Chrysalis Corporation containing rear projection screens which resembled gigantic television screens and displayed movies on various topics; and
- A display sponsored by HEW, which permitted visitors to test equipment designed to aid physically handicapped persons.

Finally, several of the most elaborate exhibits (costing the organizations in some cases over $100,000) attracted and held viewer attention. Notable among them were:

- A temporary weather station, prepared by the National Oceanic and Atmospheric Administration, which displayed information about local weather conditions on machines linked to satellites; and
- A display and demonstration by NASA of equipment designed to monitor vital signs in space-bound astronauts.

Categorization and comparison of exhibits on the basis of cost alone is rather futile, since success in attracting and holding viewers seems dependent on other more important factors. Indeed, several of the obviously very expensive exhibits appeared also to attract the least number of visitors. For example, the conventional "unpacked from a crate" displays offered by the Atomic Energy Commission, PEPCO, and several others, drew fewer visitors than the home-made variety, prepared by the League of Women Voters and others.

Location within the exhibit hall might be offered as a significant variable influencing exhibit attendance; however, observers agree that (1) a majority of people visited all areas, and (2) certain exhibits, remote from entries, exits and major circulation paths, received substantial visitor attention.

Realizing their untested and unresearched nature, we, nonetheless, offer the following conclusions concerning exhibit effectiveness at Capital City Readout:

- The presence of human attendants added an important and useful educational dimension to exhibits since it allowed issue-oriented dialogue between visitors and representatives of organizations. Attendants also helped to assure that visitors understood the significance of exhibit materials in the context of the exposition's theme.

- Exhibits displaying objects of intrinsic interest -- items which visitors could study, handle or manipulate -- were very attractive, but in some cases left the organizers with an impression that visitors were only preoccupied with equipment, and learned little about social issues or scientific principles. This effect was apparently diminished when exhibit attendants made efforts to explain the significance of interesting objects and equipment, as did personnel attending NASA's and HEW's exhibits.

- Exhibits with visual images and sounds discernable from remote locations drew the most visitors. Concise, unified presentations (for example, the sound and slide show offered by Pre-Term, and the Co-Opt puppet show) sustained visitor attention better than did longer or relatively undirected exhibits (for example, displays which required visitors to "browse").

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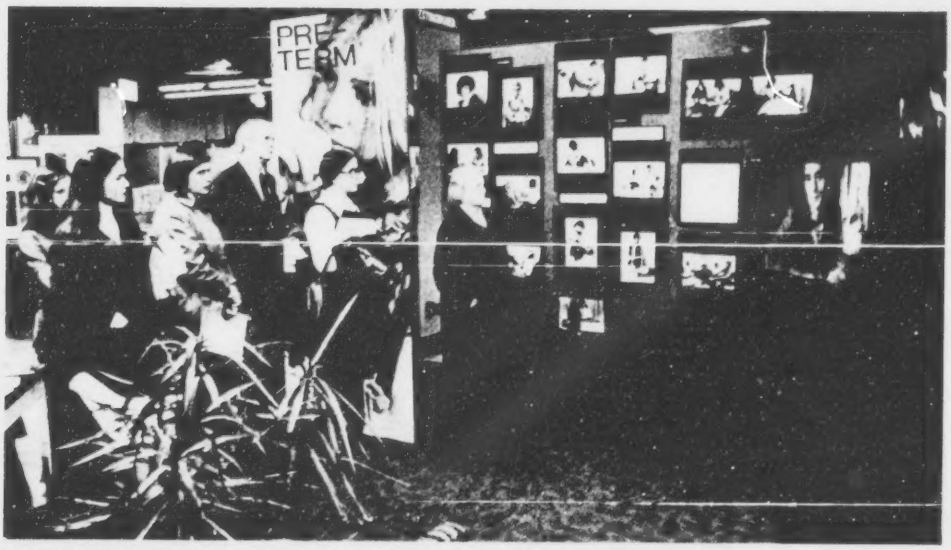

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Only a few exhibitors (notably Preterm, Planned Parenthood and Co-Opt) actually presented their ideas strongly in the local problem-and solution-oriented context suggested by publicity for Capital City Readout. Assuming the publicity worked, visitor expectations may not have been met by exhibits which failed to underscore issues.

A host of technical and logistical problems accompanied the exposition: orientation of exhibits to the hall entrance so visitors could, upon entering, have an overview of exhibits; noise interference among neighboring exhibits; layout of the exposition hall to meet space requirements of individual exhibitors; and crating, transport and storage of exhibit materials.

Also, visitors had no prescribed sequence in which to view exhibits and process issue ballots. One possible solution to this problem would have been to allow ballots to be cast directly in front of (or near to) exhibits concerned with the issue in question. No strong relationship existed between statements on the ballots and materials in exhibits. The content of each exhibit was not always clearly set forth, which could easily have been done with a large sign or placecard identifying the exhibit's theme. This was an especially acute problem with continuous, unattended movies, where a sign would have helped visitors to identify films in progress. Finally, a map of the exposition hall, perhaps placed in the ballot book, would have provided visitors with an overview of exhibits and their sponsors.

4.5
FUNDAMENTAL PROBLEMS WITH THE UNDERTAKING

Experiences with Capital City Readout and a review of comments from observers reveal several major areas which require consideration and improvement for future community information expositions:

- Synthesis and representation of a range of viewpoints may be difficult to achieve simultaneously. Synthesis requires strong coordination of planning and design, while presentation of balanced views may require participation by many interest groups. How can information be made comprehensive, understandable, and unbiased?

- Credibility and effectiveness are attributes which exposition sponsors and planners should possess if public trust is to be maintained in the honesty and worth of the effort. Strong affiliation with a single organization is likely to arouse public suspicion that motives behind exposition feedback activities are promotional, i.e., that information is unfairly slanted to "sell" attitudes toward problems and solutions favored by particular interest groups. Also, many persons believe (perhaps somewhat correctly) that most institutions are quite specialized, and might, therefore, have little ability or legitimate interest in affairs of the whole community. Appropriate and capable existing institutions, and ways to develop new ones, should be identified.

- Communication between organizations and citizens raises fundamental questions: what kinds of citizen feedback are useful to policymaking organizations, and to the citizens themselves; what kinds of information, and how much, do particular non-expert audiences need on problem and policy topics; what are the best ways to present information on the complex and changing affairs of society? New methods of communication, taking advantage of advances in information technology, should be developed for use in these contexts.

- Maintenance of exhibit and citizen response-gathering programs over extended periods of time is costly. Every organization is constrained by limited human and financial resources. How can substantial costs be absorbed or offset?

- Location of exposition activities affects attendance characteristics. Centralization of exhibits creates geographic isolation; failure to locate expositions in recognized and highly trafficked civic areas leads to reliance on expensive and sometimes unreliable publicity devices. Citizen access to information is limited by the hours during which an exposition is "open" and persons who must be elsewhere at those times are excluded. Buildings carry with them cultural biases, to the extent that some people will avoid places they perceive as being "for someone else." Appropriate exposition locations, to reach intended audiences, should be identified.

- Linkage to similar or related activities in other regions of the nation would help to improve community information efforts. Information on events and methods used in other areas of the country is difficult to obtain and use effectively. How can reports on various experiences, and lessons learned from them, be disseminated to other communities?

- Evaluation should be made of potential impacts which innovative communication methods can have on public understanding of, and citizen participation in, community decision-making processes. Very little is known about applications of interactive display media to such processes.

We have identified these seven areas of concern for future popular expositions based on our direct personal experience with Capital City Readout, on comments provided by participants, on interviews with persons having related interests or abilities, and on research into literature on interactive display media. Each source of information posed substantial and important questions about ways to improve future exchanges of regional information, many of which are reflected in the concerns outlined above. Chapter 5 suggests some potential answers to these questions, gleaned from many of the same sources.

4.6
SUMMARY OF EVALUATION

Out of six major goals for Capital City Readout, four were well satisfied, one was not, and evidence on another is not yet in (see section 2.1 for a complete statement of goals):

- We demonstrated the viability of a new mode of communication on regional issues.

- Organizations -- involved in identification and solution of problems -- displayed information on a number of important regional problems. Citizens and organizational representatives discussed issues.

- 2200 citizens registered their views on local issues but these were not reported to organizations.
- We developed communication techniques and organizational procedures for possible use in other places.
- It remains to be seen whether the exposition stimulated similar subsequent efforts.

The preceding chapter contained detailed analysis of attendance, exhibit effectiveness and presented comments from participants. Salient comments and criticisms of the effort are summarized below.

Attendance at Capital City Readout totaled nearly 5500, which was slightly over one half the anticipated number.[4] Promotion, while extensive, was not effective in persuading many members of low income and minority groups to attend. Location of the exposition in an expensive hotel probably discouraged attendance by local residents.

Smaller non-profit and volunteer organizations were generally more responsive than large institutions to exhibit development guidelines, which requested displays focused on specific local problems and efforts being made to solve them. Most participating organizations expressed satisfaction with the exposition, although several cited low attendance as a disappointment. For several organizations, the exposition provided a valued first opportunity to build exhibits, some of which have received regular subsequent use.

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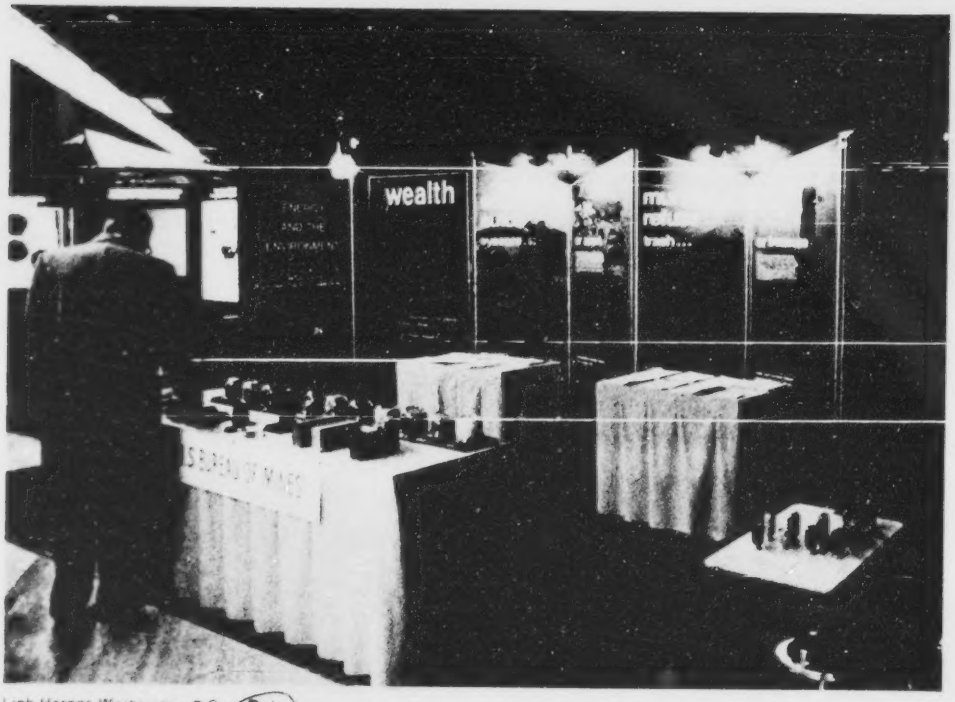
Exhibit attendants added significantly to communication and education processes. They helped to create a dialogue between individual citizens and policymaking institutions. In exhibits, there appeared to be little relation between the amount of money invested and ability to attract and sustain visitor attention; imaginative design ideas were most important.

Large visual images, sounds, and objects of intrinsic interest attracted the most visitors to the exhibits. Static, undirected, two-dimensional displays did not attract and sustain peoples' attention.

A number of problems will confront similar future efforts. These include: synthesis of exhibit topics; credibility and effectiveness of organizers and sponsors; adequate planning and preparation time; forms and effective uses of citizen feedback; methods of communication through exhibit media; and planning and carrying through necessary evaluations of exposition effectiveness.

The exposition was successful in that it so far has satisfied four of the six major goals set for it. In addition, over 5000 people viewed the exhibits at an average rate of 1000 per day; local newspapers, television and radio stations took considerable interest in the event; and many people and institutions have expressed interest in the concept.



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COMMUNITY INFORMATION EXPOSITIONS

LESSONS AND OPPORTUNITIES FOR THE FUTURE

5.0
RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE COMMUNITY EXPOSITIONS

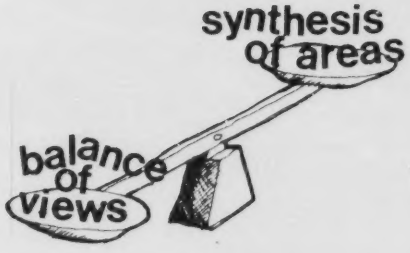
Individuals considering future community expositions should pay particular attention to the following seven interrelated areas: synthesis of information, balance of viewpoints, credibility of the sponsoring or organizing group, effectiveness in working with diverse groups, participatory planning, coordination and long-term viability of the exposition.

These seven areas certainly do not cover all of the aspects of the substantive planning and development which future efforts will encounter. Our purposes are to (1) identify the most serious difficulties facing future efforts and (2) explore ways to approach them. Problems and examples of solutions with general and widespread application are discussed here, in hopes that suggestions put forth will be useful to a variety of groups from different regions. (Of course, great care should be taken at the beginning to define the goals to be attained and to ensure that appropriate procedures are set up to accomplish those goals).

5.1
SYNTHESIS AND BALANCE OF VIEWPOINT

Information on social problems and alternatives comes in many forms, on many topics, from many sources. One result is fragmented knowledge among citizens about problems and the full range of opportunities facing their communities.

Community expositions should serve to synthesize the overwhelming array of information on regional problems and policy alternatives. Representation of a full range of opinions and views may hinge on participation by a broad range of interest groups, especially the relatively powerless, in planning and implementation stages. Such is the reasoning behind a recent movement in American schools of architecture and urban planning toward "advocacy planning," the provision of volunteered professional services to citizen groups otherwise unable to afford them.



When it comes to popular communication efforts, however, participation by many organizations presents problems. Capital City Readout, which had exhibits prepared by 40 different groups, was confusing to some visitors, who readily understood the importance and message of individual exhibits, but couldn't understand the place of individual exhibits in an apparent overall scheme. Participation by organizations with varied interests and views tends to meet the need to achieve balance in what is presented, but the need to synthesize these views remains as a major intellectual and organizational problem with the multi-sponsor approach.

Groups in several cities have tried to organize community information within easily understood and comprehensive frameworks. Most of these efforts can be placed in one of three general categories: (1) organization by issues; (2) organization by themes; or (3) organization by process.

Issues are often used as a context for presenting information and gauging popular opinion, perhaps because they are easily identified as areas of popular concern. One needs only to become familiar with the content of local news media reports in order to develop a sense of current community issues; the questions posed in Capital City Readout ballots were formulated essentially from this kind of observation.

Referenda tend to focus on issues (which can range from fluoridation of water supplies, to construction and support of educational facilities, to funding of mass transportation systems), and, although local news media disseminate vast amounts of information on many aspects of such controversies, issues are generally unsatisfactory as a basis for activities which aim to improve communication processes and to enhance popular understanding of a complete range of community needs and opportunities.

Issue-oriented information tends to be concerned with only a few (often polarized) solutions to problems, rather than with a full range of options and opportunities. Fundamental, underlying questions rarely receive adequate attention, if they are raised at all. Such issues, with their short-term focus and narrow scope, present only scattered bits and pieces of larger questions which urgently need to be better explored.

Themes have been used, with better success, to focus public information on topics of lasting concern, many of which can be translated into issues. Museums often orient exhibit material to themes.[1] The Bureau of International Expositions in Paris, which oversees all "Expo" ventures, grants special status to events which focus on specific themes. Exhibits for the 1974 Spokane World Exposition (Expo '74) are to be concerned with the theme "How Man Can Live, Work and Play in Harmony With His Environment."[2] Disneyland, too, relies on the use of thematic structures for organization, as in "Tomorrowland" and "Main Street."

Considered alone, most exhibit themes (when not irrelevant) are too broad or platitudinous to provide more than a very general background for information. Of course, this is an important function which should not be ignored. Too often, though, a theme serves only to collect under one label an incomplete set of weakly related concepts. However, if carefully conceived, themes can provide a clear and comprehensive way to organize popular information and citizen participation processes.

Significant examples are such process-oriented efforts as "Goals for Dallas" in Texas, and the growing number of "Year 2000" projects in such places as Hawaii and Seattle, Washington, or "Tommorrow" projects in California and Massachusetts and, to a lesser extent, "Choices for '76 in New York City." These efforts attempt to direct the attention of experts, the public and other policymakers toward the future of a region, to identify and define problems and options, to establish priorities and to achieve consensus on goals. Such activities provide a fairly comprehensive and focused context for popular communication and citizen participation activities.

The "Seattle 2000 Report to Citizens,"[3] a supplement to local newspapers, contained lists of goals ("statements of desired levels of achievement") and objectives ("Measurable short-range steps toward achieving the goals") for the future of Seattle. Task forces composed of citizens, professionals, civil servants and businessmen prepared statements of goals, objectives and strategies for implementation.

The task forces were assembled so that each might be especially well-suited to consider one of twelve areas:

Community; diversity and uniqueness for neigborhoods and a sense among residents of belonging to a larger community.

Downtown and Major Activity Centers; concentration of cultural, recreational, commercial and governmental facilities as a means of providing community focus and vitality.

Economy and Economic Security; development of an economy less dependent on fluctuating aerospace industry, and provision of more jobs to minorities.

Education and Communication; use of community resources to extend opportunities for personal growth to all individuals.

Environment - Pollution, Population and Energy; control of forces which threaten health and welfare of residents.

Government and Citizen Participation; modernization of laws and procedures to permit more effective and equitable citizen involvement in local and regional community affairs.

Housing; provision of living arrangements based upon individual needs and desires, rather than upon standards.

Law and Justice; provision of fair and speedy trials to those accused of criminal offense, and programs which rehabilitate to those who are convicted.

Recreational, Cultural and Leisure Activities; improvement of opportunities for recreation, use of leisure time, and understanding, enjoyment of, and participation in the arts.

Social and Health Services; provision of comprehensive, readily available care so that optimum health and well-being may be enjoyed by everyone.

Social Justice and Human Resources; extension of equal opportunities in all areas to all people.

Transportation - Utilities - New Technologies; planning, implementation and operation of transportation and utility systems to achieve the social, economic and environmental goals of the people of Seattle.

Seattle 2000 and other similar efforts provide for citizen participation in a process of planning community goals and developing strategies for implementation, as demonstrated by the excerpt on the left.

The "Year 2000"/"Tomorrow"/"Goals" activities offer an excellent way to organize matters of community interest and enable citizens to help identify community problems and options and implement policies. Community "outreach" of these movements would be served well by use of exhibit media in addition to newspapers, radio and television.

5.2 CREDIBILITY AND EFFECTIVENESS

Maintaining public trust in the integrity of information received is an important need to be considered in development of any program aimed at large, relatively undifferentiated citizen audiences. This problem is especially acute when considering options, since an entire effort can be easily discredited if special interests are linked (even incorrectly) with promotion of particular views.

It is not enough that an organization responsible for popular communication efforts be unbiased in its approach: the public must be convinced of the fact, and so must other organizations whose participation is sought. In the heat of debate over public issues, even the most neutral organizations, with the broadest public purposes, can be accused of failure to be objective.

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The problem discussed here has to do with images, held by citizens and institutions, of those who plan and coordinate information activities; the final effort will be judged not only on the basis of its merits, but also on the basis of who was responsible for it. Motives of the AAAS were suspected by some groups invited to participate in Capital City Readout. One group offered the view that the exposition represented nothing more than an attempt by an establishment institution to "look relevant." Some wondered why an organization of scientists would (apparently) take sudden interest in communicating with citizens about social problems.

The credibility and effectiveness of an organization responsible for planning and coordination of public information activities appears to hinge on at least three critical factors:

- A reputation for impartiality and unbiased interest in communicating with citizens;
- Contacts among many kinds of organizations within government, academia, private enterprise and public service; and
- Access to expert knowledge in many fields.

Most of the various "Tomorrow/Year 2000" groups discussed in Section 5.1 have these attributes. Several were originated by local or state government, or by groups of individuals with extensive community contacts and local political experience. Several groups, besides governmental and academic organizations, have the needed characteristics. Among these groups are research institutes, professional societies, volunteer, certain other non-profit organizations and even some trade associations. All of these organizations have important resources, many of which could be directed toward popular communication on regional problems and options. Several such organizations have begun recently to devote substantial attention to problems and alternative futures in specific regions.[4] Some have made, or plan, considerable efforts to improve citizen participation and popular communication on community issues.

5.3 PLANNING AND COORDINATION

Research, trade and professional organizations have the unique additional advantage of a national network with active local branches. Such national influence could significantly aid efforts to initiate, coordinate and facilitate communication/participation activities (which may have similar needs) in different regions of the country.

Participation by local organizations in planning and coordination of popular communication efforts is essential if the cooperation and trust of citizens and local institutions are to be secured. Consideration must be given to processes such that the participation can occur most effectively.

Capital City Readout had a relatively simple executive structure since responsibility for the event rested primarily with the AAAS staff involved; as stated, a three-member editorial committee formulated and interpreted policy and two project coordinators carried it out. There is reason to believe that a similar arrangement would be possible and desirable in future projects. A number of people, either representing organizations or acting as individual citizens, might compose a committee to initially formulate objectives, interpret policy, provide guidance, and periodically review progress. A smaller group of skilled individuals, working regularly and closely, could be responsible for development of specific exposition design details.

Sufficient time, funds and appropriate skills are perhaps most critical to effective planning and coordination. Six months should be enough time for citizens and persons well versed in community organization and popular communication to assemble an exposition. In our experience, the bulk of such a period could most profitably be devoted to design of exhibits and development of a citizen response program. As implied in the arrangement described two paragraphs above, a clear set of goals and objectives should be developed at the outset by a group representative of community needs and interests, as has been done in the various "Goals"/"Choices"/"2000"/"Tomorrow" activities. Planning and coordination of a community interactive exposition could then become, with a clear mandate, the responsibility of an executive staff devoted full time to the effort. (23)

5.4
VIABILITY AND MAINTENANCE OVER TIME

To be an effective part of community information and citizen participation processes, interactive popular expositions require sustained existence. Apart from initial costs, two important exposition components represent the major area of expense because they require regular and continued attention:

- Maintenance, operation, monitoring, evaluation and modification of information displays; and
- Collection, analysis, interpretation and reporting of citizen responses to information.

To become more self-supporting, popular expositions should:

- Coordinate with programs of existing community institutions (museums, libraries, television and radio stations, newspapers and magazines); and
- Encourage the redirection of resources within existing community institutions toward support of communication/participation activities.

Pilot projects and particular components of long term citizen participation activities may remain attractive to various funding sources. Museums, for example, often obtain funds for special projects consistent with the aims of government and private granting organizations. At present, these include programs on various facets of "pollution" or the "energy crisis," or on related scientific principles. Several citizen information/involvement campaigns based on the use of new communication technologies currently survive on an experimental basis with grant funds.

A well coordinated planning effort could conceivably secure grant funds from various sources sufficient to produce a major and sustained exposition/feedback project in at least one community. But if it is to extend to several or many communities, the opportunity to create participatory expositions must not be contingent solely on the aims and capabilities of grantors: ways must be sought to initiate and sustain the activity by integration of existing and modified community resources.

Museums, libraries, television and radio stations, newspapers and magazines are among the most important communication resources available for use in conjunction with popular expositions. Their use in proper combination represents a way to insure long-term viability and maintenance for new forms of communication/participation activities.

SMITHSONIAN INSTITUTION

Museums of science, art and history have recently begun to voice commitment to a new urban role. A report to the Department of Housing and Urban Development by a special committee of the American Association of Museums recommends:

> Serious examination of the communities in which museums exist, with a view to discovering needs which can be met by the re-direction of museum resources and ways in which the museum can more effectively serve the community.[5]
>
> [Museums should give highest priority to] exhibitions, acquisitions and programs relevant to current urban needs and problems, including as subjects, but not limited to, the population explosion, the environmental crises, war, aging, disease, drug abuse, inter-group relations and the histories of neighborhoods within the city.[6]

Museums have vast experience with ways to interpret complex subject matter through exhibits. Their attention will probably be increasingly directed toward problems and opportunities faced by communities they serve. Museums can contribute in other important ways:

> Two new familiar museum resources have special relevance to the new neighborhood museums and other urban projects struggling into existence with the collaboration of the museum. These are the offices of funding and development and the departments of education, public information and community relations.
>
> The funding office is a relatively new part of the museum staff, created out of the growing recognition that the traditional sources of financial support are no longer sufficient to carry on, let alone expand, the programs of the museum. Such offices have made close studies of the new sources of museum funds in private foundations and government departments. Even more relevant, these offices have mastered the somewhat stylized language developed by those public and private bureaucracies. They know, for example, the minimum boundaries of control that are absolutely essential to the obtaining of funds from those sources and which may easily never come to mind when proposals are being formulated by community representatives inexperienced in the process. The aid of museum offices of funding and development can serve as a kind of switchboard and translation bureau, re-writing the plans of community centers into language

> understandable by the "philanthropoids" and bureaucrats, and connecting the potentialities of community centers with the government and private funds that are dedicated, in general, to similar purposes. In some communities, that service alone will prove of more immediate, short-term and even long-term service than anything else the museum does in the field.[7]

Libraries are another existing community which could be utilized to increase the viability and depth of public information expositions. Substantial amounts of additional information could be made easily accessible to people by orienting reading selections to subjects raised in exhibits. A member of the American Library Association suggests that libraries are likely places to locate problems-and-policy exhibits, and that interactive devices, such as issue ballots or questionnaires, can easily be distributed, collected and processed, using existing library staff and equipment.[8]

Local print and broadcast media can provide some necessary information dissemination and collection services. In the Albany-Troy-Schenectady region of New York State, Rensselaer Polytechnic Institute collaborated with local newspapers and television stations to produce a special project titled "Feedback: Citizen Involvement in Education."[9] TV programs were broadcast in conjunction with newspaper articles on the topic of education, explanations of the project and an "issue ballot." Viewers were asked to mark and return ballots by mail after watching telecast discussions among community leaders, students, parents, educators and local school system representatives. Newspapers then published results of the balloting, portions of which were used by the project team to design questions for consideration in subsequent broadcasts, articles and ballots.

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This example indicates important ways in which several existing community resources (newspapers, magazines, television and radio stations, university computer centers) can be used to produce more interactive and participatory processes of public information and decision-making. Balloting/reporting activities may become regular activities of popular print and broadcast media. Interactive expositions would benefit from strong association with such projects since the expenditure required to gather, process, analyze and report citizen responses to policy questions would be accommodated by ordinary communication media.

The solution to the problem of insuring that an exposition or other popular communication activity has long-term viability -- i.e., is dynamic, flexible and financially secure -- involves understanding and effective use of existing community resources, which can range from public communication media to public parks.

We suggest that innovations in popular communication on community topics can be made more enduring and less difficult to finance through the integration and redirection of programs in institutions such as museums, libraries, television and radio stations and newspapers. Clearly, citizen access to information is also improved. As more institutions and facilities become involved in popular communication activities, "outreach" to community members (some of whom might not be reached by a more limited approach) will increase in effectiveness, as is argued in the next section.

5.5
OUTREACH TO THE COMMUNITY

Public information displays should be located in many different places so that people can encounter them easily in the course of daily work and leisure activity.

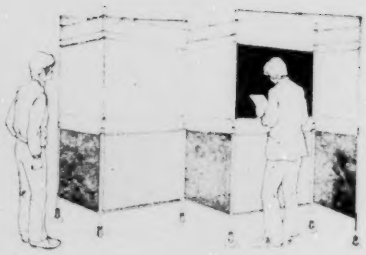
Capital City Readout was staged in a large, expensive hotel, located in an area alien to many residents of Washington, D.C. Attendance did not represent a cross section of Washington's population; many segments of the local community -- particularly Blacks, Latin Americans, and those with middle and lower income -- were under-represented. In retrospect, a hotel was undoubtedly a poor choice for the site of a popular community exposition.

Events of a public nature should occur in places recognized as community territory and reached easily by people who need to be attracted. The problems of cultural bias and geographic isolation do not pertain only to hotels in large cities; museums, universities, libraries, civic centers, and certain shopping districts are viewed by many persons as "places for someone else." Displays should be located in, for example, such places as:

- Enclosed shopping malls
- Museums
- Downtown street corners and sidewalks
- Parks, squares, fountains, and other outdoor public spaces
- Libraries
- Schools
- Playgrounds
- Storefront windows

- Government and other public buildings
- Subways, bus terminals, airports and railroad stations

Integration of a public information display network with human movement networks -- location of exhibits in places frequented regularly by many people -- raises questions of a technical nature. Exhibits of the type found in museums and other places to which people must make special visits would probably be inappropriate in settings where human traffic amounts are greater and attention spans are necessarily more brief.



Travelling exhibits, especially museum ones, are now common. The Smithsonian Institution Travelling Exhibit Series (SITES) offers, on hundreds of topics, displays which are durable, easily transported, assembled and disassembled. Most itinerant exhibits, however, are exceedingly dull. From the standpoint of capturing and holding viewer attention, they do not compare well even with stationary exhibits found in the "parent" museum (many of which also fail to attract and sustain attention). For the most part, travelling exhibits are little more than a series of free-standing or wall-mounted panels, each covered with two-dimensional images and explanatory text, like pages from a giant, but otherwise rather ordinary, textbook primer, and every bit as uninteresting.

Situations in which exhibits are likely to stay for longer periods of time (in places where there are always people, as in a subway station) can be treated as in a museum or exposition, since similar problems and design criteria are applicable. In addition to stationary exhibits, exhibits that can travel quickly and easily from place to place are needed.

CS/DC INC Milwaukee

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Many museums, libraries and municipal governments have implemented "programs-on-wheels" to develop the feeling among disenfranchised citizens that public institutions are "reaching out" to them. Mobile city halls and complaint centers -- offices inside trucks or trailers -- now exist in New York and Boston.[10] They enable citizens, who might not otherwise be able or willing, to have direct personal contact with government. Boston's "Center for Choice" activities carried displays and questionnaires on urban problems into many of that city's neighborhoods, making use of a remodeled tractor-trailer.[11]

More elaborate forms of itinerant display media have been proposed. Hewitt Crane of the Stanford Research Center envisions multi-media travelling shows, in the tradition of the Chautauqua covered wagons and tent Chautauqua shows which toured the United States about the turn of the century. Like its predecessors, Crane's travelling shows would mix entertainment with debate on current issues among experts, politicians and citizens. He suggests further that interactive exhibits be added to the repertoire of travelling shows.[12]

Archigram Architects of London developed a project titled "Instant City," which envisioned mobile caravans travelling between urban centers. Their purpose would be to make available in one spot a complete array of urban services, ranging from entertainment and education to counselling on social problems.

There are strong arguments for decentralizing the location of exhibits on matters of community interest and for placing them in areas regularly frequented by citizens in the course of their daily activities. The initial definition of forum imparted a sense of physical place -- the marketplace, center of public business and of the community. One purpose of work in the area of popular communication and citizen participation is to restore a sense among all citizens that there is an appropriate, identifiable and easily reached place in the community for learning, discussing and becoming involved.

For some communities, a new form of community center is emerging:

> A new kind of civic center -- the shopping mall -- is blossoming across the nation and changing the lives of millions of U.S. families. For a substantial portion of America's 85 million suburbanites, and for many city-dwellers, too, the mall is replacing the old corner drugstore, the city park and Main Street as the core of community belonging in America.[13]

The Nation's 15,000 shopping centers are not only places of retail trade; many now offer a wide range of social services and programs in addition to recreational opportunities:

> **Some urban specialists, including Professor (Stephen) Burks of George Washington University, believe that shopping centers are a wave of the future and will become even more important to American society. Malls, Mr. Burks predicts, will become the focal points for a variety of governmental services, as well as social centers, making such facilities more easily accessible.[14]**

Studies indicate that shopping malls, next to work and home, are where more and more Americans spend the largest part of their time. As they do, demands grow for noncommercial facilities, such as libraries, churches, and information referral centers. Malls have become increasingly popular locations for "community relations" exhibits sponsored by police departments and other government agencies.

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In order to reach the whole community, popular communication and citizen participation activities might do best to travel to the people rather than require that people travel to them. Elaborate displays will not lend themselves to portability and inexpensive or easy replication.[15] A media hybrid -- combining television and exhibit -- might be possible and highly effective in providing greater outreach for stationary exhibits. Itinerant and decentralized forms of community information display should receive more attention and greater use.

5.6
COMMUNICATION TECHNIQUES

This section begins with one of the main propositions put forth in this report: there are better ways than those used conventionally to communicate technical community problem-and-policy information to large, nonexpert audiences. The problem has been stated concisely in these terms:

> **The mode of understanding that is needed is one of gestalt appreciation rather than explicit knowledge of bits of data.[16]**

In other words, when it comes to appreciation of complex situations, people need to rely upon intuitive, rather than purely analytic faculties, in order to gain a feeling for what presented data are "telling" them.

A simple example should clarify this notion. Underneath the Chicago Museum of Science and Industry lies a full-scale, operating coal mine; visitors ride a cage-type elevator down hundreds of feet into the dark mine. Upon reaching the bottom of the elevator shaft, they transfer to a small train. It travels through dimly lit man-made caverns while a guide (in authentic miner's clothing) explains technical facets of coal mining, represented by "realistic" passing scenery.

Short of actual work as a miner, there is probably no experience available which could do as much to convey to people a strong and accurate sense of what this extractive industry is like; one gains a quick feeling for not only the technology -- the tremendous scale of equipment and effort expended -- but also for whatever impact coal mining has had upon the earth, the finite nature of mineral resources and the difficult circumstances endured by humans who perform the work.

The Chicago coal mine does not illustrate precisely the nature of current extractive technology. Of course, many "advances" in the industry have been made since this replica was built, but this is not the major point. The operating coal mine "exhibit" is an example of the approach required to convey to audiences a trustworthy sense of appreciation for a rather complex situation, which could not be done as well nor as quickly by most other means. All human senses are focused primarily on the subject at hand during this ride through the mine. The strongest impressions gained by visitors are through intuitions facilitated by direct experience with the mine environment.

Designers at Disneyland understand well and use creatively similar communication principles. Their chief "Imagineer" described the process as one of removing from the visitors' environment any information contradictory to a principal message. He learned this from experiences in the early days of cartooning when Disney's designers mastered the power to control entirely the content of animated movie screen images. To some people, this great a degree of control of the message is objectionable -- when they became aware of the control.

"Tomorrowland," "Main Street" and "The Jungle" are convincing because, like the Museum of Science and Industry coal mine, they envelop visitors within a situation where all senses and faculties are receiving a single, well-defined (but complex) message.

The Smithsonian Institution has begun to apply some of the same techniques of environmental exhibitry to social topics, most notably in its recent travelling show on "Drugs" (where Disney-inspired talking mannequins explain various views of drug use) and, perhaps more effectively, in a display on World War I, a battlefield replica with barbed-wire fences, trenches and the sound of shells exploding. Can similar methods be used to demonstrate the nature of various local problems and policy options?[17]

What about concepts and situations which do not lend themselves readily to communication through replication?

> **There is a great and growing need for the kinds of powers of communication that help a person gain, vicariously, a feeling for the natures of fields too extensive and diverse to be directly experienced.[18]**

This is a problem, in part, of synthesis; some way must be found to integrate various problem areas, show their interrelations and impacts on one another, and present them in forms which lead to comprehensive understanding. Substantial arguments have been made to show that:

> **Prose and its archetype, the mathematical equation, do not suffice. They offer more specificity within a sharply limited region of discourse than is safe, since the clearly explicit can be so easily mistaken for truth, and the difference can be large when context is slighted. Also, prosaic description has a natural affinity for specialty, which is nearly the opposite of the mood in which wholes are to be felt.**
>
> **What is called for is some way (or much more likely, ways) of capturing directly the infinite capacity we all have for sensing and discriminating among wholes.[19]**

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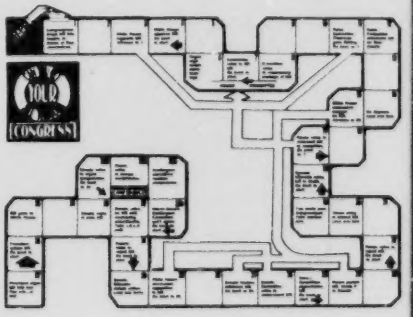
Models, games, animations and maps -- and other forms of simulation -- are among alternatives to prosaic expression which may be useful in giving lay audiences an intuitive grasp of complex social problem situations, much as they have been used by military and business strategists to derive quick and accurate impressions from vast amounts of information (several exhibits at Capital City readout used these methods, as discussed in section 3.4).

We have encountered a number of impressive and useful methods for building surrogates of reality. It should be noted that there is no clear agreement among professionals in the field on terminology for activities using models, simulations or games.[20] Methods which may be useful in popular communication are discussed briefly below.

Gaming, to quote one theorist, "has its chief utility in the way in which it prompts its players to behave for awhile as though the fictional situation were real and therefore to engage in visceral powers of discrimination. If one can get himself to function in an appreciative mode (as contrasted with an analytic, intellectual one), that in itself can be important."[21]

Experts report that, despite impressions to the contrary given by mass media, comparatively few existing games are oriented to non-military purposes.[22] Among examples of non-military gaming applications are land use planning games, intended to teach the management of urban development problems (CLUG, CITY, METRO, APEX, etc.), and various free-form games, which an authoritative source describes as the form "least expensive" and "most likely to produce an impressive array of new insights into complex problems."[23]



"Enviro-County" is one such game employed by academicians, policymakers and citizens to resolve hypothetical community problems at the Cooperative Science Education Center at Oak Ridge, Tennessee.

Simulations of past, present and future conditions in the physical environment may become more useful to citizen participation in planning activities through development of physical scale models and simulated visual experiences of urban environments.

The Berkeley Environmental Simulation Laboratory group envisions the usefulness of its work with large models of the San Francisco Bay Area:

> **Present techniques for simulating future environments utilize plans, perspectives, photographs and models. These simulations are usually quite distant from environmental experience. They are difficult for laymen to understand, as with plans or other abstractions, or they provide an illusion of reality that is likely to be inaccurate, as with models, single perspectives, or photos from one or two viewpoints. By communicating to the public the nature of environmental proposals, the simulator can provide a focus for the assessment of environmental impacts and for the resolution of environmental conflicts.[24]**

Designers of scale-model simulations, recognizing limitations and dangers inherent in efforts to represent even the physical aspects of present or future reality, describe one way in which such equipment might become an effective component of community forums:

> **Simulating the true consequences of a project should be the aim of a public environmental simulator. One way to accomplish such a difficult task is to make a distinction between the proposed environment that project planners have designed and the consequent environment that may result. Since such consequences cannot be predicted with certainty, a plural strategy of projection might be necessary. Protagonists and antagonists of a project could be called upon to articulate their predictions of the consequent environment and simulations could then be made of both. Or, an independent outside expert may be called upon to make "impartial" predictions. Besides assisting in the public choice of alternative plans, the simulator can therefore aid in predicting the alternative consequences of projects. Trade-offs can then be made between them.[25]**

Mathematical models of complex situations are potentially useful but probably less accessible to the public since expert and specialized analytical skills are required to operate and understand them. An approach similar to the "World Game" conceived by R. Buckminster Fuller,[26] if modified to pertain to a local context, could display present and potential future conditions influenced by the use and availability of community resources. Like the models used by J. Forrester and the group at MIT (for example, as in the books World Dynamics and Limits to Growth), techniques developed by the Battelle Laboratories (DEMATEL, Decision-Making and Trial Evaluation Laboratory) and others, such abstract models would need considerable modification in order to become either readily understood or effective popular communication devices.

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Animation of conventional social indicator information has been proposed as a way to make statistical information more accessible to citizens. Termed "kinostatistics" by its originators, the concept calls for "exploitation of audiovisual attributes such as motion, color mixes, auditory nonverbal communication, and user interactive systems" in order that "elaborate messages might be more accurately, coherently and speedily communicated."[27]

Applied Urbanetics, Inc., of Washington, D.C., has developed techniques to map and animate sequences of social indicator information, understandable at a glance by audiences relatively inexperienced in handling such data.[28]

Each of the foregoing examples suggests answers to the fundamental problem of synthesis and holistic communication stressed in earlier discussions of popular communication. Although far from representing a complete array of available and useful communication techniques, they reflect some significant principles and products of the field.

5.7
CITIZEN RESPONSE MECHANISMS AND THE USES OF FEEDBACK

The AAAS community exposition sought to treat visitors as sources, as well as receivers, of information. Issue ballots and exhibits with attendants added an interactive dimension to the exposition since citizens could "talk to organizations" by chatting informally with representatives and by casting votes on various issue questions (on which most organizations did take a stance).

The ballot book streamlined the survey process and eliminated the often intimidating and dulling experience of completing questionnaires. In addition, project organizers hoped that a certain spirit of inquiry and dialogue might be evoked by inviting citizens to respond to material presented by local organizations. In fact,

however, they were invited to respond to issues, the issues were not directly linked to specific exhibits, and visitors had no prescribed sequence for viewing of exhibits and processing of ballots.

Dialogue and interaction were facilitated by a number of electronic devices, some of which were designed for use in "town hall" meetings, and which should be useful in community expositions. Some examples are:

- Computer-assisted interactive cable television programs, which enable viewers to respond to audio-video information (for example, illustrated issue questions) by manipulating touchtone pads, alphanumeric keyboards or (in the case of cathode ray tubes) light pens;[29] and
- Electronic "voting boxes," devised by Thomas B. Sheridan of MIT for use in large meeting situations where group response to questions needs to be gathered, recorded and displayed quickly.[30]

Both examples suggest important new ways to facilitate discussion among citizens, experts and policymakers; in an exposition format these devices might serve the same purpose as a standard survey, with the added possibility of many rounds of rapid presentation, questioning and response, with greater amounts of group or individual choice of topic areas.

5.8
IMPACT EVALUATION

Future community expositions should be designed to permit rigorous evaluation from several major standpoints:

- Public interest as reflected in patterns of attendance, audience demographic characteristics and subjective visitor comments.
- Comparative ability of various display configurations, media and community locations to attract and sustain viewer attention and to create public understanding of problems and options.
- Usefulness of information from citizens to planning and problem-solving organizations.
- Impact on community decision-making processes, and on community decisions, in such areas as growth, land use, transportation, education and employment opportunities.
- Residual uses of exhibits and other impacts on participating organizations.
- Impact on organizations supporting the exposition.

Evaluation of each of these areas requires investigation substantially beyond the scope permitted by research done for this report. Nonetheless, we stress the need for collaboration during planning stages among social scientists, exhibit designers, citizens, survey designers and urban planners to insure adequate bases for evaluation.

The difficulties of organizing interdisciplinary-interinstitutional efforts are well known. We suggest that -- given strong leadership, clear goals and necessary incentives -- such an approach can work well. Specifically, expert individuals from local universities, government and private organizations could be called upon for professional advice, or even to take on full design responsibility for various elements of the exposition and citizen response programs.

Coordinated and relatively modest funding from foundations with broad social and technical concerns (for example, the National Science Foundation) could produce the incentives necessary to provide exposition planners with the resources for rigorous evaluation in the areas previously described.

5.9
SUMMARY OF RECOMMENDATIONS

The material preceding this section discusses some potential solutions to problems we encountered in the Washington, D.C. exposition. It also examines ideas and activities which may be of use and interest to planners of future expositions.

One purpose for this report is to stimulate further and better communication/participation activities in other regions. To this end, we present, in abbreviated form, our recommendations. Readers are encouraged to refer to the main portion of this chapter for full discussion of these points.

- The various "Goals"/"Choices"/"2000"/"Tomorrow" activities, in such places as California, Texas, Massachusetts and New Hampshire, offer a good way for communities to identify problems and opportunities, to set goals, to establish priorities, to consider and implement policies, and to obtain useful citizen participation in these processes.

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- Outreach to all kinds of citizens is important but difficult, due to differences in needs, perceptions and attitudes. Expositions should be located in places to which people have regular and easy access (bus stations, shopping malls, etc.). To the same end, itinerant community information displays should be developed, to visit occasionally such places as parks, fairgrounds, playgrounds, schools and downtown pedestrian areas.

- Museums, libraries and local mass media have begun to sense and pursue a new role for themselves, closely associated with local environmental issues and public information needs. Persons seeking to establish popular communication on community affairs should take advantage of the resources offered by these institutions.

- Planning and coordination are perhaps the most important two efforts aimed at building public understanding and participation. We recommend the establishment of small advisory groups, composed of persons who represent a range of community interests, in order to develop objectives and set goals for regional expositions. A smaller group of skilled personnel, functioning as executive staff to the advisory board, could then be devoted full time to planning and coordination.

- Citizen response or feedback, and its potential uses, should receive careful attention. Ballots and surveys should be closely linked with exhibit materials, a requirement which suggests the need for collaboration during planning stages among social scientists, exhibit designers and survey specialists.

- Communication on complex topics through display media can best be served by intuitive, rather than purely analytic, means. Among the techniques being developed for this purpose are gaming, animation, modelling and other sophisticated forms of simulation, many of which could be used in community expositions. Where possible, human attendants should be used with exhibits, both as an added source of information and as a way to make dialogue more personal.

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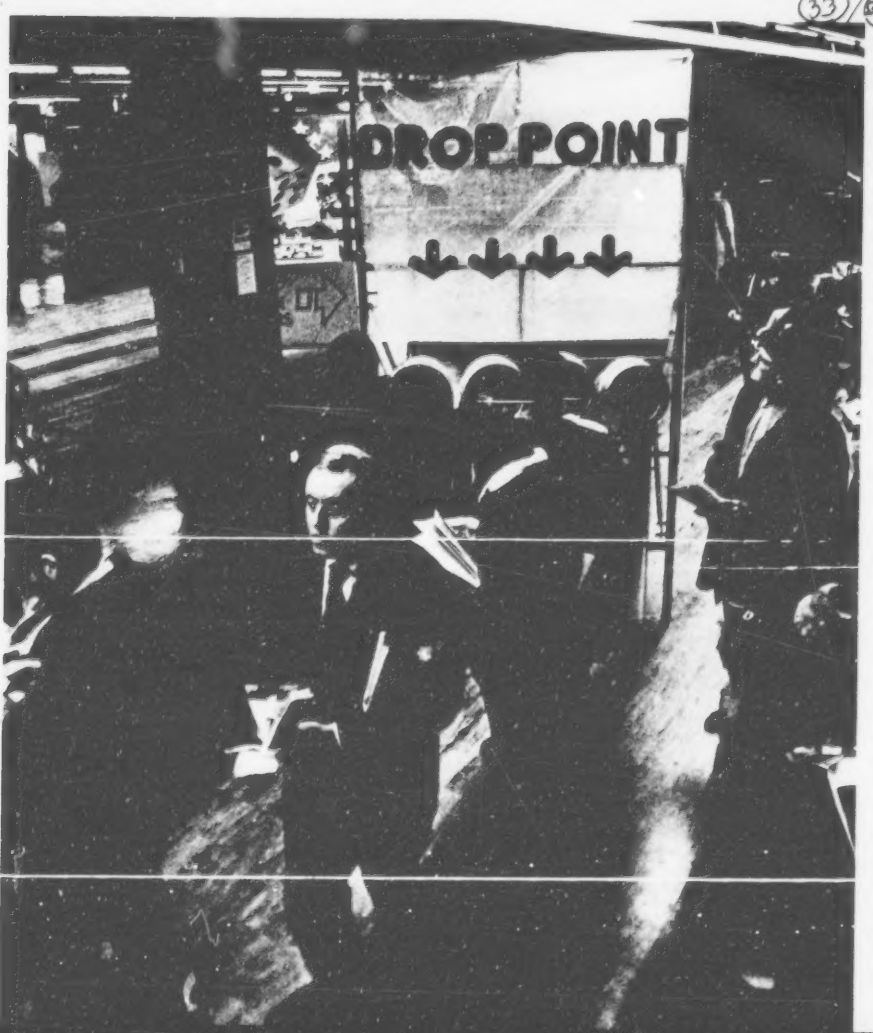


6.0 OPPORTUNITIES FOR COMMUNITY EXPOSITIONS

During preparation of this report, we met with or contacted a number of groups and individuals interested and experienced in various aspects of problem identification and analysis, popular communication, and citizen participation. One reason for initiating such contacts was to identify capable organizations from different regions which are or might become active in organizing problem-and-policy oriented communication activities.

Such groups include the various "Year 2000"/"Tomorrow" organizations, which now exist in California, Massachusetts, Hawaii, Rhode Island and Washington State, as well as "Goals for Dallas" in Texas, "Choices for '76" in New York City, and "Feedback" in upper New York state. These have already been discussed in section 4.1, and the potential role of museums and libraries has been discussed in section 4.4.

This section discusses several opportunities where interests and abilities exist, and where communication/participation activities might be developed. Appendix 5 provides a directory to individuals and organizations with knowledge about and interest in at least some aspects of such activities.

6.1 SOME INTERESTED GROUPS

Contacts were made in six regions with representatives of the following organizations:

SAN FRANCISCO

- Oakland Museum
- Palace of Arts and Science, Exploratorium
- Latino Local Development Center
- University of California Department of Urban and Regional Development
- Skidmore, Owings and Merrill, Architects and Engineers
- Stanford Research Institute
- Patterns and Systems International
- California Tomorrow
- Lawrence Hall of Science

PHILADELPHIA

- University City Science Center
- Franklin Institute
- Citizens Alliance Service of Pennsylvania
- Philadelphia American Revolution Bicentennial Commission

SEATTLE

- Seattle 2000
- Pacific Science Center
- Battelle Pacific Northwest Laboratories
- Expo '74 (Spokane)

BOSTON

- Boston Children's Museum
- University of Massachusetts
- Boston Science Center

CHICAGO

- Field Museum of Natural History
- Museum of Science and Industry

NEW YORK CITY

- Brooklyn Museum
- American Museum of Natural History
- Regional Plan Association (Choices for '76)

It would be inaccurate to imply that all of these organizations will become involved in sustained communication/participation efforts. While some of these groups are actively developing community programs, others may need assistance and encouragement through the activities described in the next two sections.

6.2
THE AMERICAN REVOLUTION BICENTENNIAL CELEBRATION

Among other things, the 200th anniversary of the founding of the Nation has become an appropriate occasion to reconsider democratic ideals and find ways to translate them into new programs of citizen participation and community development.

In addition to a national Bicentennial Commission, each of the 50 states and the District of Columbia have formed committees to encourage and sponsor activities at state and regional levels. Many cities have formed similar organizations. Bicentennial-related funding programs are planned or are under consideration by the National Endowments to the Arts and Humanities, and the National Science Foundation (NSF). A recent NSF conference titled "Science and the Bicentennial" involved many leaders in the science and technology areas as well as a number of leaders in the museum world.

Many efforts planned for the Bicentennial extend well beyond mere celebration of the Nation's birthday. Citizen groups in several cities have argued strongly that, for too many people, there is little worth celebrating as conditions of poverty, ill health, inadequate housing, unemployment and unsatisfactory education continue to exist.

The District of Columbia, as the seat of the national capital, anticipates over 10 million visitors during 1976 -- most of them drawn by special public programs created for the Bicentennial. Major efforts connected with the Bicentennial are also under way to provide Washington's residents -- many of whom are poor, unemployed and inadequately housed -- with programs of lasting significance. Such programs as reconstruction of riot-damaged commercial areas, creation of an "in town" sports arena, and obtaining the right for citizens to elect city government ("home rule") resulted directly from grass roots citizen participation in hundreds of neighborhood meetings and membership in small Bicentennial advisory groups. The citizen-elected D.C. Bicentennial Commission publishes a community newspaper,[1] which disseminates progress reports and other useful information on urban needs and problems.

Many models exist for other cities and regions to develop similar Bicentennial programs designed to determine citizen priorities and resolve local problems. Expositions on community issues represent an important way for cities and regions to promote public awareness, understanding and participation, for the Bicentennial year and beyond.

6.3
EXPO '74 AND OTHER WORLD EXPOSITIONS

The 1974 Spokane World Exposition expects approximately 4.5 million visitors during the six months it is open to the public, from May to November, 1974. Approximately three-quarters of those visitors are expected to come from areas close to the Pacific Northwest -- California, Idaho, Nevada, Washington, Oregon and British Columbia. As mentioned, the theme of Expo '74 is "Man Living in Harmony With His Natural Environment." The Bureau of International Expositions in Paris, which has responsibility for scheduling all "world fairs," has mandated that exhibits at Expo '74 must be directly related to the theme because of its status as a special-subject exposition. Furthermore, the United Nations Conference on Human Habitation, called tentatively CONFEX (CONference EXposition), will occur in Vancouver in 1976.

It is clear from projected attendance characteristics and their themes that Expo '74 and CONFEX present good opportunities to involve residents of the Pacific Northwest in an effective and stimulating consideration of problems and options faced by the region.

Special status world expositions, by virtue of their comparatively limited thematic scope and ability to draw mostly local visitors, offer great potential for development of exhibits and citizen participation activities related to regional issues. Traveling problem-and-policy exhibits and continuing citizen participation activities are two of the many residual benefits which communities might expect as a result of playing host to special status world expositions.

6.4
NATIONAL INFORMATION NETWORKS AND NODES

Such expositions as we describe could become part of activities envisioned for a national network of community information exchanges, a concept developed by Chandler H. Stevens of Rensselaer Poltechnic Institute. He defines a community information exchange as:

> any readily identifiable process or organization which facilitates two-way flow of a fairly wide range of information among individual citizens and between citizens and institutions within any particular community.[2]

Information exchanges, not necessarily discrete or new physical facilities, would support community dialogue as well as "citizen feedback and knowledge feedforward." These nodes in a national or global information exchange network would provide citizens of specific localities with a variety of services designed to increase knowledge about, and involvement in, the resolution of community issues. According to Stevens, their purpose would be to:

> enable individual citizens to cope better with complexity (especially bureaucracy), to participate more in community decision-making, and generally to become de-isolated, de-alienated and de-mystified.[3]

Clearly, there is considerable overlap between what Stevens proposes for increasing citizen involvement and what we propose. An alliance between the two would do much to increase the usefulness of both concepts in facilitating community dialogue and interaction among citizens, experts, and policy makers.

6.5
REGIONALISM AND NATIONAL ORGANIZATIONS

Exposition-like activities often occur during annual meetings and conventions of professional and trade organizations such as the American Medical Association (AMA), the Institute of Electrical and Electronic Engineers (IEEE), the American Institute of Architects (AIA) and many others. Such expositions are usually little more than showplaces for manufacturers' products.

Several professional, scientific and engineering societies are focusing great interest on invigorated local or regional public service activities (the American Institute of Architects' "community design centers," the AAAS-sponsored "Citizen Energy Inquiries") or are considering service related, action assisting, regional programs. As a public education service, professional and trade associations could also create citizen information programs through such community expositions as we have described. Exhibits developed for use during annual meetings or conventions could focus on problems and opportunities of specific regions. Such exhibits could receive continued and regular use throughout the region, beyond the duration of meetings or conventions, and thereafter might be donated to local museums, libraries or schools.

Many professional organizations have elements which could be useful in developing community expositions. These include:

- Expertise among members;
- Existing regional chapter organizations; and
- Staff and office resources devoted to meeting activities.

A large number and variety of other national organizations, with regional networks, with interests in regional citizen information activities, and with access to expertise, are possible sponsors for community information expositions. A list of such organizations can easily be generated, and would include the research institutes, the urban institutes, government and private foundations, politically-related organizations, public interest groups, benevolent societies, and so on.

Perhaps many of these would not actually be the prime or single sponsor for major community information activities, but all such institutions could contribute to, and benefit from, a well planned effort. (37)/(38)

CONCLUSION

Community problems and citizen participation are receiving increasing attention from local and national institutions and organizations. This focus may stem from the perception that much needs to be done at the local level, that local government is more accessible to the citizen, or that local problems are more tractable than national or global ones. However, even at the local or regional level, it is difficult for communities to identify problems, consider options, establish goals, and define and implement policies; disagreements abound among citizens, experts, and public officials, over whether or not certain programs -- from freeway construction to methadone maintenance programs for heroin addicts -- are desirable, beneficial, necessary or feasible. Science and technology frequently are important elements in the cause, understanding and solution of community problems. Understanding their role is an important step in achieving informed decision making.

The difficulties encountered in attempting to resolve the many pressing issues raise fundamental questions about the effectiveness of the processes by which the public and community leaders understand and participate in the solution of community problems. This suggests that a need exists for improved communication about community problems and work toward solution of those problems, and for more effective informed citizen participation in all aspects of community decision making.

Among the range of possible mechanisms to fill that need, and within the context of a more extensive citizen participation framework, Community Information Expositions, such as the AAAS experiment, Capital City Readout, can play a useful and effective role. The AAAS undertook that exposition in order to:

- Increase citizens' understanding of the nature and scope of community problems, resources and opportunities;
- Increase citizen participation in identifying and solving problems and developing opportunities;
- Increase peoples' understanding of both the beneficial and detrimental aspects of science and technology in society, and thereby
- Increase public appreciation of the role of science and technology in aiding community efforts to identify problems, provide options, and develop opportunities.

Capital City Readout was intended to:

- Establish a new mode of communication on current and specific social issues confronting a particular metropolitan region, and demonstrate the viability of such expositions.
- Present a balanced approach to a number of important problems of the region, and do this from the viewpoint of organizations working to identify and solve problems in their social context.
- Provide an opportunity for person-to-person communication between members of the public and representatives of organizations about displayed information.
- Enable citizens to register their views on issues raised by the exhibits, and to report these views to exhibiting organizations.
- Develop organizational procedures and communication techniques for use in other regional information centers.
- Stimulate subsequent similar efforts in other communities by exposing scientists, engineers, educators, government officials, media representatives, and citizens to an example of problem-oriented communication.

At least 5500 people attended Capital City Readout during the five days it was open to the public. 40 organizations -- involved in identifying and solving local problems -- displayed information on a number of important regional issues. The impact was diffuse and would not have been easily measured, even if fully adequate procedures for such measurements had been attempted. Nevertheless, a number of readily determined benefits resulted from the exposition. For many organizations, the exposition was a valuable and much appreciated first opportunity to communicate with a large general public. Several exhibits developed especially for Capital City Readout receive continued use in new situations. Of the 5500 who attended, 2200 individuals registered their views on a series of informal issue statements loosely linked to individual exhibit topics. The AAAS community exposition received widespread attention on local radio and television programs, in local newspapers, and through local schools.

The event has also led to this report and some recommendations which should help others wishing to stage improved future versions in other communities. Certainly, such expositions cannot survive by themselves. Museums, libraries, local and national organizations, citizen groups, local governments and so forth, all need to participate in some way.

It seems clear that the AAAS exposition at least partially accomplished its four objectives. However, the degree to which citizen understanding and participation have been increased remains to be measured by more carefully considered and better funded future Community Information Expositions. It is also clear that the AAAS effort accomplished six or its seven goals. Whether it, and this report, will have had a significant role in stimulating similar future efforts remains yet to be determined.

It is also clear from our experience that such endeavors will require staff, money, patience and wisdom. They might involve failures and may at times strain professional sensitivities. However, the nature and interelatedness of society's problems, the need for people's informed participation in reaching decisions about these problems, the role of science and technology in society, and the uses and management of science and technology as contributors to social change, must be better understood and communicated to scientists, to businessmen, to legislators and to all the people. To do this more effectively will require new, non-traditional, or revitalized modes of communication and, in many cases at the community level, greater person-to-person interaction such as are offered by Community Information Expositions. ■

NOTES AND REFERENCES

CHAPTER 1

1. Stevens, Chandler H., Citizen Feedback: The Need and the Response. Technology Review, January, 1971, p. 40.

2. Ibid., p. 40.

3. See note 4, chapter 5.

CHAPTER 2

1. Garrison, William, Take Me Home, Country Airways. Potomac (supplement to the Washington Post), 17 June 1973, p. 23.

2. A report by the Mitre Corporation (Interactive Television, M72-200) places widespread availability of two-way cable television at least 10 years distant for large cities, and further off for small towns and villages.

3. Suggested by Chandler H. Stevens during a conversation at Rensselaer Polytechnic Institute, Troy, New York, May 1973.

4. Lasswell, Harold, A Community Decision Center or "Social Planetarium" Academy for Contemporary Problems, Columbus, Ohio.

5. As used in this report, the terms "problems" and "options" are intended to imply a complete range of needs and opportunities to improve the physical environment and enhance social conditions.

CHAPTER 3

1. The editorial committee consisted of James Butler, director of the AAAS Communications Department; Philip Ritterbush, associate editor of the 1972 AAAS Annual Meeting and chairman of ORGANIZATION::RESPONSE; and Richard Scribner, director of the 1972 AAAS Annual Meeting and director of the AAAS Office of Science and Society.

2. The project coordinators were Joseph M. Valerio and Thomas V. Vonier of the School of Architecture of the University of Wisconsin.

CHAPTER 4

1. The Chicago Museum of Science and Industry, for example, counts individuals who pass through museum doors and surveys license plates on cars parked outside for an indication of where visitors have come from. Length of visitors' average stay in the building is also computed. For the Museum of Science and Industry this figure is approximately 3 hours and 45 minutes -- astonishing when compared to the Smithsonian Institution figure of 19 minutes (Museum of History and Technology), but modest in comparison to Disneyland's 8 hours.

2. The Smithsonian Institution Office of Museum Programs now has a Division of Psychological and Sociological Studies, which, among other things, sponsors projects and symposia involving interdisciplinary teams comprised of social scientists, architects, behavioral psychologists and various members of the museum regular staff.

3. Comprehensive bibliographies on the subject have been compiled by Ross Loomis of the Smithsonian Institution and Harris Shettel of the American Institutes for Research (see directory, appendix 5).

4. An average daily attendance of 2000 was anticipated (10,000 total). Philip Ritterbush of the editorial committee made these estimates on the basis of his experience with attendance figures while on the staff of the Smithsonian Institution Office of Museum Programs.

5. In a forthcoming book, tentatively titled: What's In A Node?, Chandler H. Stevens of Rensselaer Polytechnic Institute suggests that all early experiments of this sort can expect disappointing results.

6. When asked if he were interested in attending the exposition, one local cabdriver confidentially assured the questioner that the event was "only for scientists attending the convention."

7. Shettel, Harris, An Evaluation of Existing Criteria for Judging the Effectiveness of Science Exhibits (submitted to the Atomic Energy Commission under purchase order number NY-65-366), American Institutes for Research, Pittsburgh, Pennsylvania, 1965, Appendix B.

CHAPTER 5

1. This practice has been so prevalent that it barely needs mentioning, except to note its continuation in major museum exhibits such as "Man in His Natural Environment," planned for the Chicago Field Museum of Natural History, which bears remarkable thematic similarity to Expo '74.

2. A publication of the U.S. Department of Commerce (Proposed Federal Participation in the International Exposition at Spokane, Washington in 1974) describes in sufficient detail the aims and procedures of the Bureau of International Expositions. About Expo '74, the booklet says:

> **Upon request of the United States, the BIE officially recognized the Spokane exposition as a special category exposition with the theme 'How Man Can Live, Work and Play In Harmony With His Environment.' A special category exposition is classified by the BIE as one which deals with only one particular technique, raw material or basic need -- in this case the environment.**

3. Seattle 2000 Report to Citizens (supplement to the Seattle Post-Intelligencer), 30 April 1973, p. 10.

4. Notably, the Stanford Research Institute of Palo Alto, California, and the Battelle Pacific Northwest Laboratories of Richland and Seattle, Washington.

5. American Association of Museums, Museums: Their New Audience. Washington, D.C., 1972, p. 13.

6. Ibid., p. 14.

7. Ibid., pp. 11-12.

8. Suggested by Dr. Charles Baumann, director of the John F. Kennedy Memorial Library at Eastern Washington State University, in a letter dated 29 March 1973.

9. Information on this project is available in a report to the Office of Public Understanding of Science Programs of the National Science Foundation, prepared by Floyd Barwig and others at Rensselaer Polytechnic Institute.

10. Jackson, Larry, The New Way to Fight City Hall. Parade (supplement to the Washington Post), 13 May 1973, p. 14. A comprehensive bibliography on mobile city halls and other decentralized municipal services is available from the National League of Cities, 1620 Eye Street, N.W., Washington, D.C. 20006.

11. David Bird of Bison Associates in Boston, designers of the mobile unit, can provide information on the "Center for Choice" project and on the John Sears Mayormobile," a similar effort launched during a local political campaign (see directory, appendix 5).

12. Crane, Hewitt D., Travelling Shows: An Entrance to a Way Out (unpublished manuscript furnished courtesy of the author). Stanford Research Institute, Palo Alto, California, March 1973. Crane cites descriptions of Chautauqua travelling shows from Culture Under Canvas: The Story of Tent Chautauqua, as told to Karl Detzer by Harry P. Harrison (publisher and date unknown) and Joseph Gould's The Chautauqua Movement (State University of New York Press, Albany, New York, 1968). From the latter source:

> **Oblivious to the sneers of the sophisticates, tent Chautauqua flourished in the United States for more than twenty years. It was praised for having done more toward keeping Americans informed, alert and unbiased than any other movement, and in retrospect the judgement seems fair. Travelling Chautauqua brought to the attention of millions of Americans an impressive number of new ideas and concepts, many of which might never have received the popular support that guaranteed their acceptance. The graduated income tax, slum clearance, juvenile courts, pure food laws, the school lunch program, free textbooks. a balanced diet, physical fitness, the Camp Fire Girls and the Boy Scouts -- all these and many more were concepts introduced by circuit Chautauqua...** (42)

13. How Shopping Malls are Changing Life in the U.S. U.S. News & World Report, 18 June 1973, p. 43.

14. Ibid., p. 45.

15. Development consultant William R. Ewald, Jr. suggested in a conversation that elaborate or large displays could be effectively "replicated" through television. Pictures and sounds of the display in operation would be broadcast, in which case people would not necessarily need to visit the exhibit to learn from it.

16. Rhyne, R.F., Communicating Holistic Insights. Fields Within Fields...Within Fields: The Methodology of Pattern, Vol. 5, No. 1, 1972, p. 96.

17. Several persons have expressed the view that such displays, when applied to social topics, might be very convincing but would not necessarily reflect an honest appraisal of real and potential situations. The dangers of propaganda and extreme subjectivity seem to be great. Of course, the competence, integrity and intentions of those who produce such displays are of ultimate concern.

18. Rhyne, R.F., op. cit., p. 93.

19. Ibid., p. 99.

20. An excellent (if more precise than necessary for purposes of this report) set of definitions is provided in Brewer, G.D. and Martin Shubik, Models, Simulations and Games -- A Survey. The Rand Corporation, Santa Monica, California, R-1060-ARPA/RC, 1972.

21. Rhyne, R.F., op. cit., p. 101.

22. Brewer, G.D. and Martin Shubik, op. cit., p. 7.

23. Ibid., p. 9.

24. Appleyard, Donald and others, The Berkeley Environmental Simulation Laboratory: Its Use in Environmental Impact Assessment. Institute of Urban and Regional Development, University of California at Berkeley, Working Paper No. 6, 1973, p. 4.

25. Ibid., p. 15.

26. Fuller, R. Buckminster and others, The World Game: Integrative Resource Utilization Planning Tool World Resources Inventory, Southern Illinois University, Carbondale, Illinois, 1971.

27. Feinberg, Barry M., Kinostatistics: Communicating a Social Report to the Nation. Bureau of Social Science Research, Washington, D.C., BSSR:532, 1972, p. 5.

28. Paller, Alan and Samuel Berger, A Map is Worth A Thousand Printouts. Computer Decisions, November 1972.

29. The Mitre Corporation has developed a number of programs for experimental use in Reston, Virginia. They are designed to allow residents to "call up" and vote on community issues via interactive cable television. See note 2, chapter 1.

30. Sheridan, Thomas B., Citizen Feedback: New Technology for Social Choice. Technology Review, January 1971. See also "Technology for Group Dialogue and Social Choice," printed in the proceedings of the Fall Joint Computer Conference of 1971. Sheridan has developed simple, portable and inexpensive equipment. Several manufactured student response systems, for use in classrooms, will do much the same thing. Also, since more expensive systems identify individual respondents, they can be used in various gaming and computer-modelling situations.

CHAPTER 6

1. Available from the D.C. Bicentennial Commission, 1025 15th Street, N.W., Washington, D.C. 20005.

2. Stevens, Chandler H., Towards a Network of Community Information Exchanges. Let the Entire Community Become Our University, Philip C. Ritterbush, editor, Acropolis Books, Ltd., Washington, D.C., 1972, p. 191.

3. Ibid., p. 192.

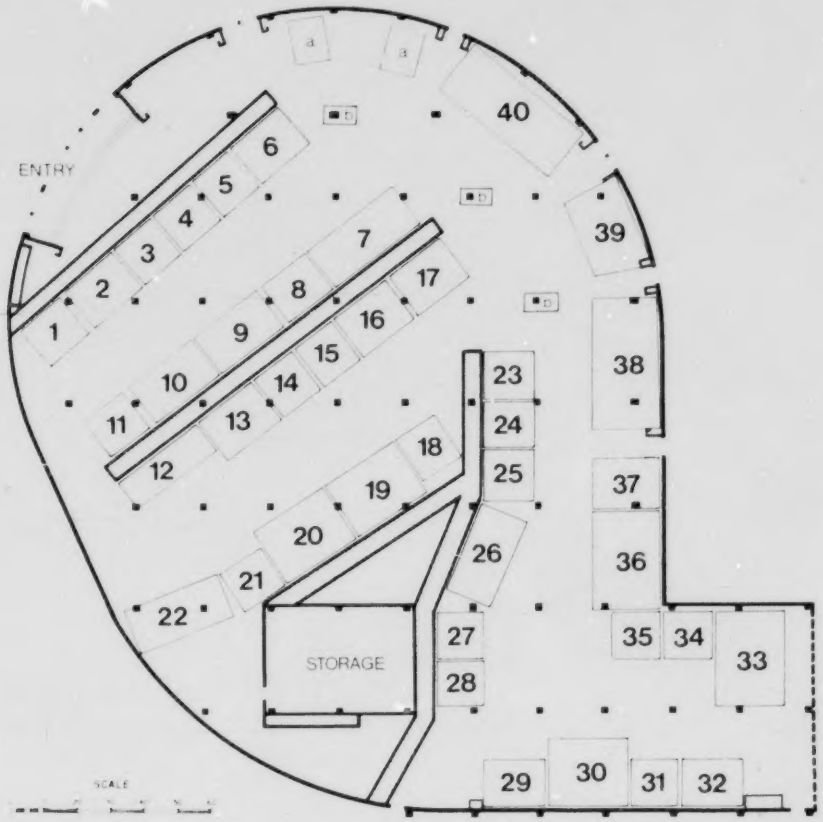
BEST COPY AVAILABLE

APPENDIX I

EXHIBITS AT CAPITAL CITY READOUT

EXPOSITION HALL

FLOOR PLAN



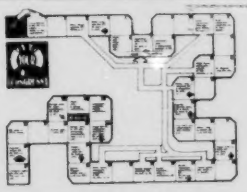
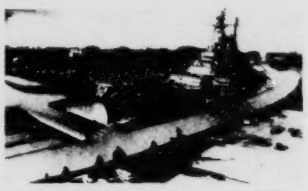
KEY TO PLAN

PLANNING FOR SOCIAL, PHYSICAL AND TECHNICAL RESOURCES
○● 1. Coalition on Optimum Growth (Co-Opt)
○● 2. Citizens Transportation Coalition
3. Federal City College Science Van
● 4. District of Columbia Redevelopment Land Agency
● 5. George Washington University Department of Urban and Regional Planning
○● 6. League of Women Voters of the National Capital Area
○● 7. Arlington Coalition on Transportation
8. National Capital Planning Commission
● 9. United States National Parks Service
○● 10. World Future Society, Washington, D.C. Chapter
11. Washington Technical Institute
USE, OPERATION AND MANAGEMENT OF NATURAL RESOURCES
12. United States Atomic Energy Commission
13. United States Department of Interior, Bureau of Mines
14. Chesapeake and Potomac Telephone Company
○● 15. Center for Science in the Public Interest
○● 16. Sierra Club, Potomac Chapter
● 17. Washington Gas Light Company
○● 18. Chesapeake Bay Foundation
● 19. United States National Oceanic and Atmospheric Administration
● 20. District of Columbia Department of Environmental Services
○● 21. Concern, Incorporated
22. Potomac Electric Power Company
COMMUNITY HEALTH AND WELL BEING
● 23. Reuters
24. American National Red Cross
○● 25. Planned Parenthood of Metropolitan Washington, D.C.
26. United States National Aeronautics and Space Administration
○● 27. Mitre Corporation
○● 28. Woodrow Wilson International Center
29. Anacostia Neighborhood Museum, Smithsonian Institution
○● 30. National Capital Child Day Care Associates
● 31. University of Maryland Institute for Child Study
● 32. Applied Urbanetics
33. United States National Bureau of Standards
● 34. District of Columbia Department of Human Resources
● 35. Georgetown University Public Services Laboratory
36. United States Department of Health, Education and Welfare
● 37. Washington Center for Metropolitan Studies
● 38. United States Bureau of the Census
39. United States Government Printing Office Bookstore
40. District of Columbia Public Library Videotape Center
○▲ Chevrolet Corporation Media Balloons
▲ Tabor Ballet Depositories

● = exhibits prepared especially for use in Capital City Readout
○ = recipients of financial aid to prepare exhibits

EXHIBITS

NO	NAME OF SPONSOR AND DESCRIPTION OF CONCERNS	DESCRIPTION OF EXHIBIT	COST IN DOLLARS	FLOOR AREA (FT^2)
1	COALITION ON OPTIMUM GROWTH (CO-OPT)	Puppet show and characters of a shoreline building, city hall, bull dozer, freeway and water pumps to dramatize the pressures and interests which lead to harmful, uncontrolled growth and development. Characters portray the views of a politician, real estate broker, businessman, contractor, and distraught resident.	$250.00	300 sq. ft.
2	CITIZENS TRANSPORTATION COALITION	Four 30"x40" posters/cut-outs show how various areas of Washington would look if served by different types of transportation facilities. The options depicted include a completely auto-free downtown commercial district; a six-lane rail-oriented corridor by automobiles and overhead mass transit; and suburban commuter zones served by high speed interstate rapid rail.	$280.00	225 sq. ft.
3	FEDERAL CITY COLLEGE SCIENCE VAN	Team of environmental science and computer specialists conducts and demonstrates field and laboratory experiments in a mobile van. The van drives to various locations in the city, stops at selected sites and the experiments are conducted.		225 sq. ft.

4	DISTRICT OF COLUMBIA REDEVELOPMENT LAND AGENCY To promote and implement plans for renewal of blighted, substandard, abandoned and riot-damaged areas within the District, through acquisition of land, condemnation and demolition of deteriorated property.	Freestanding panels display "before and after" photographs of local urban renewal areas and maps of development plans for future projects; text describes the authority and procedures by which the agency operates.	NR	225 sq. ft.	
5	GEORGE WASHINGTON UNIVERSITY DEPARTMENT OF URBAN AND REGIONAL PLANNING To examine and plan for public needs at neighborhood levels, while providing volunteer professional planning and design skills to citizen groups otherwise unable to afford them.	Wall mounted maps of an area in Washington's Southwest quadrant show discrepancies between official plans for location of Metro subway stations and the need for stations as demonstrated by community desires, population densities and commercial activity centers. Public display of this study was instrumental in bringing about reconsideration and modification of Metro plans by authorities.	$200.00	225 sq. ft	
6	LEAGUE OF WOMEN VOTERS OF THE NATIONAL CAPITAL AREA To encourage democratic citizen participation in resolution of local issues through voter education, study of proposed legislation, and publication of accurate information about candidates for office.	The procedures (and pressures) involved in passing legislation through Congress are incorporated into a simple game of chance: players advance toward the objective (an approved bill), stopping at various squares painted on the floor, each of which represents a necessary stage (or setback) in the development of a new law.	$240.00	225 sq. ft.	
7	ARLINGTON COALITION ON TRANSPORTATION (ACT) To increase citizen involvement in planning for transportation corridors which respect and leave undisturbed the historical, scenic and recreational significance of land in the right of way.	Movies, drawings and three dimensional scale models show visual impact of proposed interstate highway on a relatively undeveloped section of Virginia. Sketches depict ways to use land for outdoor leisure purposes, rather than for movement of automobile traffic.	$200.00	225 sq. ft.	
8	NATIONAL CAPITAL PLANNING COMMISSION To establish guidelines for development of Potomac riverfront in a manner which exploits scenic and recreational potentials and ensures that new buildings harmonize with historic waterfront surroundings.	Free-standing, rectangular steel space frames display maps, plans, sketches and charts, which describe problems and potentials for development along the Potomac and Anacostia riverfronts. Illustrated design objectives and guidelines are shown as one way to influence and evaluate proposals for future development.	$250.00	100 sq. ft.	
9	UNITED STATES NATIONAL PARK SERVICE Through the "Washington Summer in the Parks" program, to provide federally-administered parks in the District of Columbia with regular, free leisure activities, such as concerts, dances and ethnic festivals.	Three rear projection screens show photographic slides made during public events at various local parks last summer. Amplifiers broadcast music and other sounds which were tape recorded during the outdoor events.	$300.00	225 sq. ft.	
10	WORLD FUTURE SOCIETY, WASHINGTON, D.C. CHAPTER To encourage people to think about the future of Washington, D.C. as implied by present trends and actions; and to increase the number of possible alternatives through citizen education and future-oriented dialogue.	Television monitors show videotapes of people, places, problems and processes likely to figure prominently in shaping Washington's future. A computer-assisted interactive game allows players to choose various hypothetical policy options and see predictions about their impact on the world. WFS members lead informal discussions on topics raised by exhibit.	$910.00	750 sq. ft.	
11	WASHINGTON TECHNICAL INSTITUTE To meet community needs for technical skills through educational training programs.	Synchronized slide and sound presentations describe changes in Washington's technical job market and explain WTI programs designed to meet needs in areas such as medical diagnosis and care, data handling and mechanical system maintenance.	NR	225 sq. ft.	
12	UNITED STATES ATOMIC ENERGY COMMISSION (AEC) To show how citizen interests are protected through participation in procedures for licensing of atomic energy facilities; and to provide facts about the effects of radioactive material on environment.	Large diagrams show steps required to obtain a license for operation of a nuclear plant. Viewers see demonstration of radiation levels in various parts of the environment as they aim a mechanical device (resembling a geiger counter) at photographs of typical scenes and electronic horn "beeps".	NR	300 sq. ft.	

13

UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF MINES

To diminish the loss of scarce natural resources by processing solid waste materials for use in products which are ordinarily manufactured from extracted minerals.

Charts explain sources, characteristics and quantities of solid waste materials in America and describe ways to use them in manufacture of building materials. Samples of bricks and building blocks, made from recycled materials, are displayed.

NR

225 sq. ft.

14

CHESAPEAKE AND POTOMAC TELEPHONE COMPANY

To develop telecommunication systems which require less use of scarce minerals as conductor materials.

Photographs and charts describe problems associated with growth in demand for telecommunication services and concurrent shortage of copper, the primary conducting material for electronic message transmission. Samples of new types of cable and wire, using recycled minerals or completely synthetic materials, are displayed.

NR

225 sq. ft.

15

CENTER FOR SCIENCE IN THE PUBLIC INTEREST

To supply citizens with more adequate technical aid in environmental and consumer issues, by promoting interaction between scientists and citizen organizations.

A table-top electronic quiz game has players answer multiple choice questions about the nutritional value and permissible contamination levels in certain foods, and the source and magnitude of environmental pollutants, including noise and automobile exhust emissions. A light bulb glows when the player chooses the correct answer.

$210.00

225 sq. ft.

16

SIERRA CLUB, POTOMAC CHAPTER

To ensure conservation of the Chesapeake Bay and wise use of natural resources in other local areas.

Map of the region plots location of such problems as thermal addition to waterways caused by atomic energy plants, and difficulties likely to arise from construction of a liquid natural gas storage terminal proposed for the Chesapeake Bay. Enlarged photographs show visual blight and economic disaster brought on by strip mining of coal in the Virginias.

$350.00

225 sq. ft.

17

WASHINGTON GAS LIGHT COMPANY

To explain impacts and causes of a local natural gas shortage, and demonstrate possible solutions to the problem.

A series of wall-mounted cardboard panels trace origins of the natural gas shortage. Charts explain effects of importation quotas on supplies and rates. Sketches depict workings of liqiud natural gas pipelines, overseas shipping routes and local storage terminals.

$300.00

225 sq. ft.

18

CHESAPEAKE BAY FOUNDATION

To demonstrate threats posed by man to wildlife in the Chesapeake Bay.

A display of enlarged photographs and slides shows harmful effects of water pollution on plant and animal life in the Chesapeake Bay.

$200.00

225 sq. ft.

19

UNITED STATES NATIONAL OCEANIC AND ATOMOSPHERIC ADMINISTRATION (NOAA)

To show how weather analysis, monitoring and forecasting are used to predict and help prepare for potentially damaging floods caused by heavy rains, tornadoes, hurricanes and earthquakes.

Comprising a temporary weather station, printers, mappers and video screens are linked directly to U.S. weather satellites and display current weather information for the region, while meteorologists prepare forecasts. Charts, diagrams and maps explain procedures for monitoring of weather and water levels for flood control along the Potomac River and its tributaries.

NR

300 sq. ft.

20

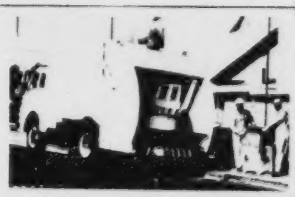
DISTRICT OF COLUMBIA DEPARTMENT OF ENVIRONMENTAL SERVICES

To collect and dispose of solid waste materials for Washington, D.C.

Charts explain new trash handling procedures. Photographs document recent efforts aimed at modernizing collection and processing equipment. Samples of new designs for garbage cans are displayed.

NR

225 sq. ft.



21

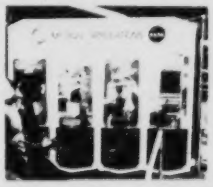
CONCERN, INCORPORATED

To make consumers aware of the environmental impact of household products and practices; encourage manufacture of products less harmful to the environment; and investigate and promote better methods of pollution abatement.

Pages are displayed from a study of drinking water sources. Maps show location of potable water sources and charts explain purification procedures.

$200.00

225 sq. ft.

22	POTOMAC ELECTRIC POWER COMPANY (PEPCO) To reduce environmental concerns associated with the production and delivery of energy.	A mobile trailer displays charts which explain the advantages and disadvantages of various energy production methods. Movie and sound-synchronized slide show discuss growing energy demands and the hopeful future for energy production from non-polluting sources.	NR	300 sq. ft.	
23	PRETERM To provide women with abortion services in a relaxed, informal setting, thereby decreasing anxieties often experienced by patients about dangers to personal health and social ostracism.	Replica of a Preterm clinic reception room serves as a place for visitors to see a repeating sound slide story about procedures used at the clinic. The story traces one woman's experiences as an abortion patient and the nature of the operation and counselling services made available to patients. Captioned photographs, mounted on the "walls" of the reception room, serve to augment the slide presentation.	NR	225 sq. ft.	
24	AMERICAN NATIONAL RED CROSS To decrease, through a process of freezing red blood cells, the number of hepatitis cases associated with blood transfusions.	Photographs and copy describe glycerolizing, freezing, thawing and washing of red blood cells. Charts compare performance of freezing method to others. A blood washing machine is displayed.	$3,198.00	225 sq. ft.	
25	PLANNED PARENTHOOD OF METROPOLITAN WASHINGTON, D.C., INCORPORATED To increase effectiveness of birth control programs through dissemination of accurate information on various contraceptive methods and their reliability.	Suspended panels display samples of contraceptive devices. Diagrams explain proper methods for their use, their degree of reliability, and information about any hazards to health they might pose. Other panels display written and pictorial history of effort aimed at controlling population growth by contraception.	$300.00	225 sq. ft.	
26	UNITED STATES NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA) To demonstrate applications of technology developed for use in space programs to medical diagnosis and monitoring in conventional hospital situations.	An electrocardiagram machine, initially developed for effective remote monitoring of vital signs in astronauts, allows viewers to place their hands on a panel and see print-outs of heart information on a video screen. Visitors operate a device which measures muscular coordination and response time; originally for training and screening, the machine is now used for medical diagnosis.	NR	225 sq. ft.	
27	MITRE CORPORATION To demonstrate, through use of conventional telephone and television equipment, the potential of interactive two-way cable television systems for bringing new services to the home.	Visitors sit in a mock living room and use a touch-tone telephone to interact with information displayed on an ordinary television screen. Programs, being developed for experimental use in Reston, Virginia, include mathematical computation services, an auction, and various games.	$836.00	225 sq. ft.	
28	WOODROW WILSON INTERNATIONAL CENTER To identify the characteristics and needs of local Spanish-speaking residents.	A 8'x4' rear projection screen displays slides made in the native communities of Latin immigrants to Washington, D.C.	NR	225 sq. ft.	
29	ANACOSTIA NEIGHBORHOOD MUSEUM (SMITHSONIAN INSTITUTION) To develop an understanding and portrayal of contributions made to historic and contemporary America by members of minority ethnic groups.	Eight 4'x6' panels from a 22 panel travelling museum show use photographs, diagrams and text to describe the careers and contributions of Black American scientists.	NR	225 sq. ft.	
30	NATIONAL CAPITAL AREA CHILD DAY CARE ASSOCIATES To provide comprehensive day care services related to the social, psychological and physical needs of children.	The needs of children are divided into five areas. Day care programs aimed at meeting needs in each of the areas are described by captioned photographs and samples of materials used with children. Also displayed are examples of arts and crafts produced by children from local day care centers.	$200.00	400 sq. ft.	

31

UNIVERSITY OF MARYLAND INSTITUTE FOR CHILD STUDY

To develop a body of scientific knowledge about children's needs and behavior, which can be used to train individuals to work with and assist children in many situations.

A videotape of children in a group play situation focuses on the behavior of two individuals. Viewers are asked to make observations about several isolated examples of interaction between two "case study" children and their playmates. Viewers' observations can be compared to those made in a videotaped panel discussion among experts.

NR

225 sq. ft.

32

APPLIED URBANETICS, INCORPORATED

To display demographic information taken from the 1970 census in a form readily understandable to persons without skills in statistical analysis.

Computer drawn maps describe, through use of symbols, characteristics and distribution of the Washington, D.C. population. Examples are shown of techniques for displaying other social indicator information with visual symbol maps.

NR

225 sq. ft.

33

UNITED STATES NATIONAL BUREAU OF STANDARDS

To show how much of the work of a large research and standards laboratory relates to social concerns.

A series of films demonstrate applications of the work of the Bureau. One film, for example, deals with testing and standards of building products and building evaluation. Graphic illustrations show specifically how these and other efforts, such as lead poisoning studies, relate to the health and well being of the people in the metropolitan Washington, D.C. area.

NR

400 sq. ft.

34

DISTRICT OF COLUMBIA DEPARTMENT OF HUMAN RESOURCES

To provide residents of the District of Columbia with comprehensive social and health services.

Automatic slide show depicts citizens benefiting from various programs offered by the Department.

NR

225 sq. ft.

35

GEORGETOWN UNIVERSITY PUBLIC SERVICES LABORATORY

To reduce risks of death, brain damage and other impairments to young children resulting from ingestion of lead from painted surfaces.

Maps plot the location and seriousness of lead-poisoning cases in the District of Columbia; charts outline the advantages and disadvantages of three alternative solutions to the problem.

NR

225 sq. ft.

36

UNITED STATES DEPARTMENT OF HEALTH, EDUCATION AND WELFARE (HEW)

To sponsor research and development related to national needs through local pilot programs.

Machines designed to assist individuals with such handicaps as blindness, missing limbs, high blood pressure and impaired hearing are displayed. Visitors operate and experiment with the equipment as HEW representatives explain various programs under which it was developed and discuss potential uses.

NR

400 sq. ft.

37

WASHINGTON CENTER FOR METROPOLITAN STUDIES

To study and promote understanding of Washington's changing social and physical characteristics.

Maps, charts, photographs, and graphs augment text describing recent shifts and apparent trends in characteristics of Washington's population; housing supply and distribution; and transportation usage patterns.

$250.00

225 sq. ft.

38

UNITED STATES BUREAU OF THE CENSUS

To help citizens understand the nature and significance of census data gathered for the Washington, D.C. region.

A film describing characteristics of American population based on study of 1970 census data. Computer-generated maps display information on local census tract areas according to such variables as age, sex, income level, number in household, ethnicity and occupation. Visitors can receive information on their neighborhoods via a computer link to the bureau's headquarters.

NR

400 sq. ft.

39

UNITED STATES GOVERNMENT PRINTING OFFICE (GPO) BOOKSTORE

To provide further educational services through the exposition, approximately 500 government publications related to topics treated in exhibits were selected and offered for sale to the public.

NR

350 sq. ft.

40	DISTRICT OF COLUMBIA PUBLIC LIBRARY VIDEOTAPE CENTER Videotape production and playback equipment was used to capture examples of of visitor exhibit information. Portable videotape equipment was also used to record relevant symposia and sessions from the AAAS Annual Meeting. Tapes were played back on monitors located in the exposition hall.	NR	300 sq. ft.
a	CHRYSALIS CORPORATION MEDIABALLOONS Fully enclosed, air-inflated weather-proof for nearby displayed films and slide presentations pertinent to topics treated in exhibits. Films for use in the MediaBalloons were loaned by local libraries, industries and embassies.	$100.00	300 sq. ft.
b	ISSUE BALLOT DEPOSITORIES Collection points for issue ballots were placed in three prominent locations, along major avenues of visitor traffic, with large panels giving bilingual (Spanish and English) instructions for use of the ballot book. (see Appendix 2).	$100.00	50 sq. ft.

50

APPENDIX 2

ISSUE BALLOTS AND RESPONSES

BALLOT BOOK

FRONT COVER

BALLOT

CAPITAL CITY READOUT

(BALOTA)

PAGE 1

Each of the twenty pages in this book contains a statement and photograph describing a possible action discussed in one of the exhibits in CAPITAL CITY READOUT. Science is involved in the analysis or makeup of each of these options. Each action will have both costs and benefits for the future of the Washington area and its citizens; decide for yourself which of the two is greater, the eventual costs or benefits. If you are a member of the American Association for the Advancement of Science from another part of the country, judge the actions from your own professional perspective.

INSTRUCTIONS

1. EXAMINE the statement and the photograph.
2. DECIDE which is greater—eventual costs or benefits.
3. TEAR OUT the attached stub and drop it into the container of your choice.

Container No. 1	+ + VERY BENEFICIAL	YES
Container No. 2	+ BENEFICIAL	
Container No. 3	– COSTLY	NO
Container No. 4	– – VERY COSTLY	

If for any reason you have "no opinion" about a certain statement, leave the stub in the book.

PAGE 2

Cada una de las veinte páginas de este libro contiene una declaración y fotografía que describen una posible acción, la cual se discute en una de las exhibiciones de la EXHIBICION de la CIUDAD CAPITAL (CAPITAL CITY READOUT). La ciencia está involucrada en el análisis de cada una de estas opciones. Cada acción producirá costos así como también beneficios para el futuro de los ciudadanos del área de Washington; decida cuál de los dos será mayor el costo o el beneficio. Si Ud. es miembro de la Asociación Americana por el Avance de la Ciencia en otra parte del país, juzgue las acciones desde su propia perspectiva profesional.

INSTRUCCIONES

1. EXAMINE la declaración y la fotografía.
2. DECIDA cuál es mayor, el costo o el beneficio.
3. SEPARE la hoja adjunta y colóquela en el recipiente de su preferencia.

Recipiente No. 1	+ + MUY BENEFICIOSO	SI
Recipiente No. 2	+ BENEFICIOSO	
Recipiente No. 3	– COSTOSO	NO
Recipiente No. 4	– – MUY COSTOSO	

Si por alguna razón Ud. no tiene ninguna opinión respecto a alguna de las declaraciones, deje la hoja correspondiente adherida al libro.

PAGE 3

The issues stated by the AAAS in this book are not policies of the Association nor do they reflect the attitudes or opinions of any other participating or cooperating organization.

The attitudes and policies represented in the exhibits are not necessarily those of the American Association for the Advancement of Science.

Los temas declarados por la AAAS en este libro no representan la política de la Asociación ni reflejan las actitudes u opiniones de ninguna otra de las organizaciones que cooperaron o participaron.

La actitud y política representadas en la exhibición no son necesariamente las de la Asociación por el Avance de la Ciencia.

CONTRIBUTING ORGANIZATIONS

Abar Plastics Corporation / American Council on Education, Office of Research / Chrysalis Corporation / Harbinger Photographic Services / McCall Printing Company, Mid-Atlantic Division / Safeway Steel Products / Smithsonian Associates / University of Maryland, School of Architecture / University of Wisconsin—Milwaukee, School of Architecture / Washington Hilton Hotel / Washington Post / Windworks of Wisconsin

INSIDE BACK COVER

If you would like to receive a summary of the results from the issue ballot you just completed, fill in the following form and throw it into any one of the + + / – – containers.

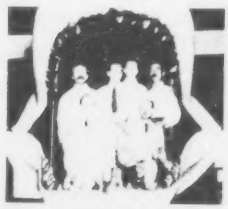
Si Ud. desea recibir un sumario de los resultados de las votaciones que Ud. acaba de completar, llene la siguiente forma y colóquela en cualquiera de los + + / – – recipientes.

Name
Nombre

Address
Dirección

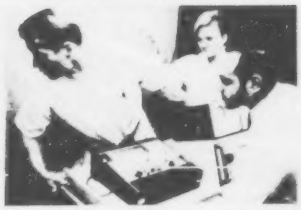
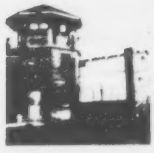
City
Ciudad

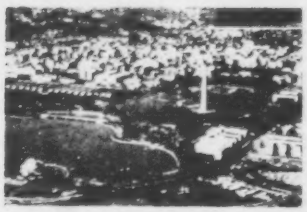
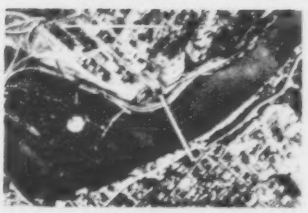
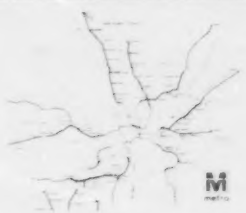
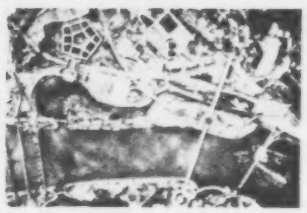
BACK COVER

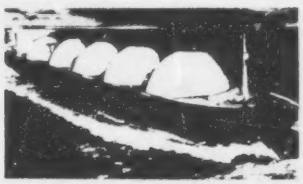
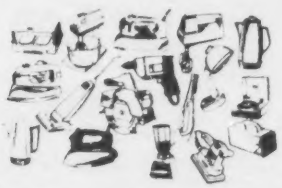


Organized by the American Association for the Advancement of Science

ISSUE NO.	PHOTOGRAPH	STATEMENT	RESPONSE PERCENT OF TOTAL: VERY BENEFICIAL	BENEFICIAL	COSTLY	VERY COSTLY	TOTAL BALLOTS CAST: LOCAL	NONRESIDENT	ALL
1		Increased use of experts in neighborhoods [illegible] for the delivery of [illegible] services [illegible] the use of [illegible] hospitals [illegible]	50	43	5	2	1535	699	2234
2		[illegible] the increased use of [illegible] in the replacement [illegible] of [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]	17	29	32	22	1470	684	2154
3		[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]	45	36	13	6	1523	595	2118

4		23	33	25	19	1486	689	2175
5		32	51	11	5	1287	7322	2019
6		38	41	12	9	1440	576	2016
7		44	37	11	8	1480	688	2168
8		16	44	22	15	1121	836	1957
9		53	27	9	11	1463	678	2141
10		38	42	14	7	1429	671	2100
11		11	24	29	36	1403	591	1994

12		16	32	26	26	1420	631	2051
13		35	40	16	9	1424	654	2078
14		40	40	13	7	1395	637	2032
15		33	39	19	9	1431	547	1978
16		44	13	23	21	1429	635	2064
17		80	14	3	3	1461	691	2152
18		78	16	4	2	1474	660	2134
19		56	26	11	7	1284	552	1836

20		Increasing the supply of electrical energy by locating atomic energy plants in the metropolitan region and the Chesapeake Bay. Aumentar el abastecimiento de energía eléctrica instalando plantas de energía atómica en la región metropolitana y en la Bahía de Chesapeake.	21	25	25	29	1335	577	1912
21		Increasing the supply of natural gas by building a Liquid Natural Gas Terminal on the Chesapeake Bay. Aumentar el abastecimiento de gas natural construyendo una Terminal das Gas Natural Liquido en la Bahía de Chesapeake.	15	29	31	26	1270	539	1809
22		Rationing the use of public utilities such as gas, water, and electricity by large institutional consumers. Racionar el uso de servicios públicos como gas, agua, electricidad, a los grandes consumidores institucionales.	31	35	20	14	1358	603	1961
					AVERAGES	**total cast**			
						per cent	68.6	31.4	100.0

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1. D. C. Department of Human Resources. 3. National Capital Area Child Day Care Association, Inc. 4. Mitre Corporation. 5. Washington Hilton Hotel. 6. D. C. Department of Human Resources. 7. Mike Fischer. 9. D. C. Department of Human Resources. 10. D.C. Department of Human Resources. 14. Air Photographs Inc. 15. Air Photographs Inc.

APPENDIX 3
ACCOUNTS OF CAPITAL CITY READOUT

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The Washington Post
Times Herald

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WEDNESDAY, DECEMBER 27, 1972

Exhibit Spotlights D.C. Issues

By Paul W. Valentine
Washington Post Staff Writer

Abortions, freeways, pollution, heroin, recycled waste, you name it—they're all issues on exhibit at the Washington Hilton Hotel and waiting to be voted on by the public.

Called "Capital City Readout," the project is organized and presented by the American Association for the Advancement of Science during its current five-day annual conclave here. It is designed to be an experimental regional information exchange.

AAAS members and the general public alike began browsing through the approximately 40 exhibits yesterday in the hotel's exhibition hall and were urged to vote their preference on a series of 22 topical social issues ranging from government-supported day-care centers to rationing the use of public utilities by large institutional consumers.

Exhibits generally are matched with one or more of the issues on the ballots.

Displays run the gamut from staid exhibits of Government Printing Office books and U.S. Census Bureau data on the Washington area to a color film of an abortion by the Preterm abortion center here and a graphic presentation of parklands, woods and playgrounds which the Arlington Coalition on Transportation says will be destroyed by construction of the proposed I-66 super highway through Arlington County.

Other exhibits include those of the Washington Gas Light Co., explaining the threatened natural gas shortage, the Woodrow Wilson International Center, citing accomplishments and problems of Latin Americans in the Washington area, the Anacostia Neighborhood Museum, Sierra Club and a number of other government, academic and citizen groups.

"The idea was to try to get a cross section of institutions which all influence the course of the D.C. area to one degree or another," Readout organizer Joseph Valerio said yesterday.

"We see a need in cities for the place and occasion to exchange ideas and images —between users and managers, between individuals and organizations—and a need for the communication of information through which these actors in the urban setting become visible entities and can have dialogue," said Valerio and coorganizer Thomas Vonier in a prepared commentary on their project.

This information exchange is supposed to occur as the government and private institutions disseminate data through their exhibits to the public viewing them, and as the viewers in turn vote their judgments and preferences on the ballots provided at the project.

Each person entering the exhibition hall fills out an unsigned registration form giving his occupation, age category, zip code and related information.

He sets a book of 22 ballot stubs, each with a description of a social issue or policy printed on it, such as "Location of treatment centers for drug abusers in residential neighborhoods," or "Increased investment in public transportation rather than in services for the private automobile."

After viewing the exhibits, the voter places the ballots in one of four containers marked "beneficial," "very beneficial," "costly," or "very costly."

"Basically, we're asking the public to say whether they think a particular thing is worth it economically, whether it's good or bad in economic terms," Valerio said.

The results of the balloting, he said, will be announced in a few weeks, after they are matched with the data from the registration forms.

"We don't know how helpful the ballot results will be as an indicator of local attitudes," Valerio said, especially if a large portion of the voters are not local residents. "We have to be very, very cautious. We don't want to add to the bad information that's already around."

By Charles Del Vecchio—The Washington Post

Visitors to the "Capital City Readout" exhibit at the Washington Hilton Hotel view a section on abortion.

The Evening Star and The Washington Daily News

THURSDAY, DECEMBER 28, 1972

Science of Soul Opens 'Capital City Readout'

By CLARENCE JOHNSON
Star-News Staff Writer

It was the science of soul as members and friends of the New Thing Art and Architecture Center—through a kaleidescope of hard rap, devastating music and mod pictures—turned on a group of scientists and citizens last night at the Washington Hilton Hotel.

The occasion was the opening day of the 139th annual convention of the American Association for the Advancement of Science in which some 8,000 scientists have converged on Washington for five days of lectures, films, displays and presentations. AAAS members also are meeting at the Sheragon-Park and Shoreham Hotels. Many programs, like the soul fest last night, are open free to the public.

For invited lectures and illustrated presentations, tickets will be sold on a space available basis.

D.C. Renaissance

About 100 persons attended the New Thing presentation last night in the International Ballroom. Called "Voices and Images from the Central City of Washington, D.C.," the program was a put-down of District crime, poverty, frustration, the various faces of hypocrisy, measured against the prophecy that the city is in "the midst of a renaissance."

The New Thing was one of about 40 organizations competing for attention with sight and sound at the Capital City Readout, which the AAAS bills as an "array of images" of science's contributions to living in the Washington area.

Among the most popular displays was one offered by the National Aeronautics and Space Administration, which demonstrated the medical applications of the space program.

Television by Phone

Next door to NASA, Rodney K. Lay of the Mitre Co., a reserach and development firm in McLean, demonstrated how a telephone can bring informational television programs into the home through cable TV. Using the touch phone dial, viewers can control programs ranging from community bulletin boards to job information to games played with other viewers.

Lay said Mitre, with a grant from the National Science Foundation, soon will demonstrate this "interactive television" in 3,500 homes in Reston.

The hands-down winner for youngsters was the puppet show sponsored by Co-Opt—Coalition on Optimum Growth. A talking city hall and a verbal high-rise called Ritz Towers were featured in the show called "Don't Sleep While the Bull Dozes" which was billed as "a contemporary tragedy in several acts."

AAAS members and the general public are urged to vote their preferences on a series of topical social issues ranging from government-supported daycare centers to rationing the used of public utilities.

The exhibits run the gamut from those representing the Government Printing Office and U.S. Census Bureau to a color film by the Preterm abortion center here. The Washington Gas Light Co. has a display explaining the threatened national gas shortage, and the Woodrow Wilson International Center cites the accomplishments and problems of Latin Americans in the Washington area. The Sierra Club, the Anacostia Neighborhood Museum and a number of other government, academic and citizen groups are also represented.

The Readout is open free to the public from 1 p.m. to 9 p.m. today through Friday and from 10 a.m. to 6 p.m. Saturday at the Washington Hiltor Hotel.

Room Vibrates

Last night the New Thing set the room vibrating with improvisational strains ranging from scramblde acid rock to pulsating African beats. At times the amplified music—made with Congo drums, an electric piano, guitars and a familiar assortment of instruments—got so loud that people sitting direcly in front of the king-size speakers covered their ears and moved to other seats.

Keeping time with the sounds were two leotard-clad men who pirouetted, bounced, rolled and frolicked for nearly an hour in an area just below the stage where the band played.

The movements of the dancers also were made to fit a speech given by one man who was spotlighted as he sat in front of the band in a sleeveless undershirt and jeans, clutching a microphone.

"All monuments are not white . . . some monuments are black," he said. "Go to 14th Street and you'll see ruins standing as monuments."

He went on to talk abou the District's black bourgeoisie—the "new Renaissance man"—the beautiful children who are "being poorly educated" and the growing crime in which black people can "get their throats cut 2.2 percent more this year than last year."

While he talked color slides—justaxposing the historic monuments of the city with slum areas—flickered across a gigantic screen.

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SCIENCE

3 November 1972, Volume 178, Number 4060

Capital City Readout—AAAS Communications Experiment

A Regional Information Exchange on the Employment of Science and Technology in Relation to the Needs of the Washington, D.C., Area

Washington Hilton Hotel, 26–30 December 1972, 1 p.m. to 9 p.m.

The AAAS is sponsoring an experimental regional information exchange in conjunction with its Annual Meeting. The project concentrates on the Washington metropolitan region as a case study area and will consist of 40 exhibits by organizations from the area. The event will be open to AAAS members and the general public. A feedback system will be used to collect visitors' responses to the issues raised by the exhibits. The Association has undertaken the project as a contribution to the public understanding of science and technology. It may also illuminate a concept in which the Association expects to take an increasing interest—the idea of centers organized on a regional basis where citizens and public agencies may exchange information about the social dimensions of science and technology. The event is being organized by Joseph Valerio and Thomas Vonier, both of the School of Architecture at the University of Wisconsin-Milwaukee. They have contributed the following commentary on the event.

Urban issues are rarely simple; nor are they purely technical in nature. The questions confronting citizens and public agencies in urban areas are more fundamental—they involve differences of perception and communication among organizations and individuals. More often than not, where disparities seem to occur between what people expect and what they actually get in the way of urban goods and services, they can be seen as the product of differing perceptions or inadequate communications. Where conflicts of goals and interests are genuine, they give rise to frustrated expectations and, where this is true, trust is placed in the abilities of various democratic processes to provide "just" decisions.

Our concern lies in those areas of public policy where matters are not quite so clear, where no conflict has been identified, yet results often differ so much from expectations that even the implementers are shocked and dismayed, especially since everyone thought everything was "going along just fine."

Organizations acquire and spend resources on behalf of individuals, usually on the basis of some specialized variety of scientific or technical knowledge. As such knowledge improves and becomes more extensive, it is curious that services and benefits do not improve correspondingly. Even where services *have* improved, this may not be perceived.

A partial reason for this is that as an organization relies more and more on scientific and technical knowledge for a decision-making basis, it becomes increasingly difficult for that organization to make citizens understand why it supports a particular policy or approach. However, simply because information is complex, technical, and scientific is insufficient reason to assume that the public can't handle it, or that they "won't be interested." As we said earlier—it's a matter of putting it in an understandable form and eliciting a response. Thus, creating and meeting reasonable expectations depends on successful communication.

True communication involves exchange, and exchange requires dealing in commodities which have meaning and merit to all parties involved. The commodity being discussed here is information. It involves ideas and facts about the city, and about lives and how they are lived. Having ideas about the city is a characteristic which organizations and individuals have in common, although the ideas are not necessarily the same and often the "language" in which they are expressed is different.

We see a need in cities for the place and occasion to exchange ideas and images—between users and managers, between individuals and organizations—and a need for the communication of information, through which these actors in the urban setting become visible entities and can have dialogue. The language spoken needs to be in terms of city images—ideas about its present future, about the meaning and direction of urban change as it relates to scientifically generated policies.

Forty D.C. area institutions, each concerned with the operations of some part of the region and how its resources are used, will come together at the Washington Hilton Hotel for the duration of the AAAS Annual Meeting. Each organization will have an exhibit describing what its functions are, what it hopes to do, and why. This group represents a cross section of the institutions concerned with managing human, natural, and mechanical resources for the Washington region. It includes hospitals, local and federal governments, universities, utilities, businesses, and community groups. The information being communicated describes *in particular detail* some aspect of what the organizations are doing in the Washington, D.C., metropolitan area. Since much of what concerns these groups involves changes in the arrangement of the physical environment, the language they use will be graphic, as our title for the event implies. What we expect to have assembled at the Washington Hilton Hotel is an array of images about the District of Columbia, in the form of plans, maps, proposals, policies, charts, graphs, computer terminals, machines, and also human representatives.

These images will be the contributions of the participating organizations. Individuals also have priorities, expectations, needs, plans, and desires—many of which pertain to the city and those who manage its resources. These are the commodities which need to be exchanged. By inviting the general public to participate in the event, and in a unique "feedback" response experiment, we hope to offer and test a specific means of exchanging regional information.

Capital City Readout reflects our concern as individuals for involving citizens in the processes of urban decision-making, so that human concerns may come to figure more prominently in the formulation of policy. Capital City Readout represents the concern of the AAAS for understanding and enhancing the role of scientific and technical knowledge in resolving social dilemmas, and for making the public aware of their potential. We suspect that "antiscience" and "antitechnology" sentiments being voiced today in many quarters of society are as much a product of misunderstanding and inadequate communications as are the urban disparities discussed above.

Science and technology are tools—resources—which can be employed to various ends. That's what Capital City Readout is about. Its aim is to help people to see what others see, and in so doing help everyone to understand more.

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APPENDIX 4

SOME INDIVIDUALS AND ORGANIZATION

This is a cross-indexed directory. Individuals are listed in alphabetical order. Organizations with which individuals are affiliated are listed alphabetically and carry a letter indicating their location in one of four geographic regions.

This listing is simply a compilation of people and organizations encountered in writing this report. It clearly does not represent a complete directory of individuals and institutions with some interest in, or activities related to, the concerns of this report.

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